Report of
The Maryland Agricultural Society—
Maryland Farm Bureau Federation,

INCLUDING REPORTS OF THE

Maryland State Horticultural Society,
Maryland Crop Improvement Association,
Maryland State Beekeepers' Association,
Maryland Vegetable Growers' Association,
Maryland Stockmen's Association,
Maryland Poultrymen's Association,
Maryland Tobacco Growers' Association,
Home and Community Committee Meeting,
4-H Club Conference.

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REPORT OF THE

MARYLAND
AGRICULTURAL SOCIETY

THE

MARYLAND
FARM BUREAU FEDERATION

INCLUDING THE REPORTS OF

THE MARYLAND STATE HORTICULTURAL SOCIETY
THE MARYLAND CROP IMPROVEMENT ASSOCIATION
THE MARYLAND STATE BEEKEEPERS' ASSOCIATION
THE MARYLAND VEGETABLE GROWERS' ASSOCIATION
THE MARYLAND STOCKMEN'S ASSOCIATION
THE MARYLAND POULTRYMEN'S ASSOCIATION
THE MARYLAND TOBACCO GROWERS' ASSOCIATION
HOME AND COMMUNITY COMMITTEE MEETING
4-H CLUB CONFERENCE

VOLUME XV, FOR THE YEAR 1930

PUBLISHED BY THE SOCIETY, MARCH 15, 1931.
EDITED BY F. M. PAYNE AND T. B. SYMONS,
BALTIMORE, MD.

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LETTER OF TRANSMITTAL

To His Excellency, Albert C. Ritchie,
Governor of Maryland.

SIR:

I herewith submit to you as directed by the Act incorporating the Maryland Agricultural Society, and also the Horticultural Society, this report for the year 1930, which contains a detailed statement of the receipts and expenditures of the Society as approved by the Executive Committee and Advisory Council. It contains the proceedings of the fifteenth annual meeting of the Maryland Agricultural Society, Maryland Farm Bureau Federation, and annual meetings of the Affiliated Associations.

I trust that an inspection of its contents will convince you that the funds appropriated for this purpose have been wisely and judiciously expended.

Respectfully submitted,

F. M. PAYNE,
Secretary.

March 15, 1931
Baltimore, Md.

THE MARYLAND AGRICULTURAL SOCIETY—MARYLAND FARM BUREAU FEDERATION

Sherwood Building
Baltimore, Md.

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Maryland State Poultry Association

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REPORT
of the
FIFTEENTH ANNUAL MEETING
of the
Maryland Agricultural Society
Maryland Farm Bureau Federation
BALTIMORE, MARYLAND
WEDNESDAY AFTERNOON
JANUARY 7, 1931

The First Session of the Fifteenth Annual Meeting of the Maryland Agricultural Society-The Maryland Farm Bureau Federation, held in the Ball Room of the Hotel Lord Baltimore, Baltimore, Maryland, convened at two-twenty o'clock, Mr. James W. Davis, President, presiding.

PRESIDENT JAMES W. DAVIS: It gives me a great deal of pleasure to call this meeting to order. I am glad to see so many Maryland farmers here. It is very good proof that we are all interested, and we have had our troubles with drought and other things in the past year, but while we may be hurt a little bit, we are not licked yet. I will introduce to you as your presiding officer for this afternoon Mr. E. Thomas Massey, Vice-President. (Applause.)

CHAIRMAN MASSEY: Mr. President, Ladies and Gentlemen: It gives me great pleasure to see so many here after this disastrous year of 1930, where we have had depression, drought, army worms, and lots of other pests. I hope that with this fine gathering we can get inspiration out of this meeting, and some enthusiasm. You men and women who are leaders of your respective communities can go back home determined to build a bigger and better Farm Bureau, because that is the only way we can put agricultural America on a sound basis, is through organization.

First on the program this afternoon is an address by your State President, Mr. James W. Davis, of Harford County. It gives me great pleasure to present Mr. Davis who will deliver his Annual Address.

PRESIDENT'S ANNUAL ADDRESS

BY JAMES W. DAVIS

Rocks, Maryland

Mr. Chairman, Fellow Farm Bureau Members, Ladies and Gentlemen attending this Fifteenth Annual Convention of the Maryland Agricultural Society-Maryland Farm Bureau Federation:

The report of the Secretary-Treasurer, Mr. Melvin M. Stewart, will give full information of the good record made by your organization since our last convention held at this place a year ago.

The National Farm Bureau Convention which met at Boston last month was one of the most successful Conventions I have ever attended. Our Maryland delegation of seventy-one was a great credit to our State Farm Bureau and did much to impress the other States with the fact that we have a real Farm Bureau in Maryland.

Our members in this State have had severe losses from the drought, but as we go about the State we hear very little complaint, and I believe the old saying that the farmer is a chronic kicker is all wrong in this case. Business and industry have had their troubles and all hope the return of prosperity is just around the next corner.

I shall call to your attention some of the things that are worthy of mention at this time:—

Our membership is larger than a year ago, our finances are in good condition, but to make the organization as effective as it should be we should use every effort to increase that membership.

I believe taxation should receive very careful consideration at the present session of the Legislature, and we can get some very useful information from the address of Mr.

C. R. White, of New York, who is a member of the National Farm Bureau Board and who will speak to this convention tomorrow afternoon on taxation as related to farmers in the State of New York.

Automobile Insurance is a service the Farm Bureau has given you at a rate which is very low, and at the same time gives you full protection. This service will be very much enlarged in the near future, and I have no doubt will be of even more benefit to you as additional lines are brought in. I predict a very bright future for this branch of our organization.

Last year after the Federal Marketing Act was passed there seemed to be an opportunity to do what had been proposed many times, but had not been attempted because of insufficient finance—and that was to engage in grain marketing cooperatively. And it was decided to extend the Cooperative Marketing plan to the grain growers of the State.

In order to carry out that plan, the leaders of the farm organizations and the extension service held a meeting at which it was decided that the Agricultural Corporation was the proper organization to do this work. The corporation applied for and received membership in the Farmers' National Grain Corporation which has been set up by the Farm Board as the National Grain Cooperative, in which State or regional Cooperatives could take stock and thus become members and receive the benefits of the Farm Relief Act.

The Grain Marketing Organization was delayed until about July 5th, owing to an effort made at the request of the Federal Board to join with another grain organization. After many conferences in which Senator Ensor, Dr. Symons, Mr. Stewart, and others gave very valuable assistance, it was agreed by all the parties concerned that it would be impractical, and the plan was abandoned.

We were then told by the Farmers National to get into action and to get all the grain we could. With this start the Corporation actively began to market wheat, and with the splendid help of Mr. Massey and Mr. Davis of Kent, Mr. H. E. Holsinger of Caroline, Mr. Merrick of Queen Anne, Mr. Reiman of Talbot and many other loyal Farm Bureau men in the State, we have marketed several hundred thousand bushels of wheat for the farmers at a very substantial saving. We now own and control our own Grain Marketing Cooperative Association, and have the full moral and financial assistance of the Farmers National Grain Corporation, which is so necessary to assure success.

Cooperative purchasing, which has had the support of the Farm Bureau, the Grange, and the Dairymen's Association, has increased in volume until it is a big business and is saving our farmers many thousands of dollars, and proving each year that we can successfully purchase our supplies as well as market what we produce.

We in this State have had ample demonstration of the great benefits to be obtained through cooperative marketing. The Maryland State Dairymen's Association has secured the producers of dairy products better prices and a more stable market than any organization of its kind that we know of. The Maryland-Virginia Association is also doing a good work in helping to obtain a fair price for its members. The Interstate Dairymen's Association is protecting the interests of the dairy farmers in the territory supplying Philadelphia.

These associations have in the last few years gotten the farmers of the State millions of dollars more in the way of better prices than could have been gotten by the old way of each man selling for himself, having no bargaining power, being at the mercy of the dealer and compelled to accept any price offered.

The Tobacco Growers' Association was organized several years ago, and has secured for its members such good prices that not so long ago I heard one of our leading dairymen say he wanted to buy a farm in Southern Maryland, because he believed there was more money in growing tobacco than there was in milking cows. I do not know whether he was right or not, but with Mr. Heaps and Mr. Gardiner managing the respective associations, I think either guess would bring him a good price.

We are very fortunate in having the assistance of Dr. Pearson of the University, whose advice is always sound and who is always ready to help when the problems are difficult.

Dr. Symons has been untiring in his efforts, and although he is a very busy man, has always helped in every way possible and is largely responsible for the success of our efforts.

I cannot speak too highly of the support the County Agents have given the Farm Bureau—they even furnished the extra "pep" needed to win the Trophy for Maryland in the singing contest at the American Farm Bureau Federation Convention in Boston, also the very efficient way in which they handled drouth relief permits on hay and feed.

I wish to express our appreciation for the assistance the railroads have given to our drought-stricken farmers in giving reduced rates on feed amounting to thousands of dollars, and I am sure this help will not soon be forgotten.

I regret very much that Mr. M. M. Stewart, our efficient Secretary-Treasurer, who has served us since the Farm Bureau was organized in this State, is leaving us for another field which promises greater opportunity and larger reward.

I am sure you will give our new Secretary-Treasurer, Mr. Frank M. Payne, the same cooperation and assistance you have given Mr. Stewart in order that the important work of your organization may be carried on successfully.

CHAIRMAN MASSEY: We will have the Roll Call of the Counties now by the Secretary.

Roll Call.

CHAIRMAN MASSEY: Next on our program this afternoon is the report of the Secretary-Treasurer of the Maryland Farm Bureau Federation, Mr. M. Melvin Stewart. (Applause.)

ANNUAL REPORT OF SECRETARY-TREASURER

M. MELVIN STEWART

FOR 1930

Mr. President, Fellow Farm Bureau Members, Ladies and Gentlemen: I am handing you herewith a report of the activities of the Maryland Farm Bureau Federation for the year 1930. In the brief time allowed upon this program today, I can only touch some of the more important accomplishments of our year's activities. The year has rolled around quickly, but it has been an extremely busy and interesting one. Last January was occupied with the annual State Meeting and with many County meetings. Farmers all over the State were thinking and talking about the Farm Marketing Act, and the Federal Farm Board, and wondering what benefit would come to agriculture from this piece of legislation. For seven years this office and organization has been doing its part along with the far-flung Farm Bureau organizations of this country to secure some form of legislation that would work for an equality of opportunity for the farmers in the markets of this country, and the markets of the world.

Right from the beginning of the passage of this legislation, there has been a tremendous opposition aroused. You will recall the fight of the speculative grain and cotton interests of the country at the last annual meeting of the Chamber of Commerce of the United States in Washington, when a resolution was adopted calling for the repeal or amendment of the Farm Marketing Act, and which would have taken away practically all of the benefits to the Agricultural Industry under that legislation.

However, the passage of that resolution by the Chamber of Commerce had the effect throughout the country of causing many local Chambers of Commerce to repudiate the action of the National Chamber of Commerce and to voice their endorsement of this piece of legislation. Likewise, it had the effect of arousing and rallying many farmers to the support of the Farm Board as a result of this opposition.

Very early in the year, Maryland farm organizations began to secure some benefits from this marketing act. The Maryland Tobacco Growers' Association, after months of negotiations, received from the Federal Farm Board authorization for a loan totaling $500,000. The Agricultural Corporation of Maryland, which had secured membership in the Farmers' National Grain Corporation, received a line of credit, totaling $200,000, but only a little of this money was actually used. The Maryland Farm Bureau Wool Pool, Inc., through its membership in the United Wool Growers' Association, and that in turn having membership in the National Wool Marketing Corporation, received sufficient money to make liberal advances to Maryland Wool Growers averaging close to 90% of the market value of wool.

The duty of our farm organizations, whether they be of the general organization type or special commodity group, is to rally to the support of the Federal Farm Board and stand shoulder to shoulder against the various attacks that are being made by the private speculative interests against that Board and the legislation which created the Board.

Now let me mention some of our activities in detail under specific projects.

Wool Marketing

Last year, in my report to you, I mentioned that I had, at the request of the Federal Farm Board, attended, on October 4th and 5th, 1929, a conference in Chicago of the various cooperative wool marketing associations of this country. Out of this conference grew the formation of the National Wool Marketing Corporation for the national handling and merchandising of wool for the farmers of this country.

The requirements of membership in the National organization, however, were that an organization applying for membership must have a minimum of 500,000 lbs. of wool. This is more wool than we really produce in the State of Maryland. Other states were in the same position, so a Regional Organization, known as the United Wool Growers' Association, was formed. Your secretary attended many conferences in Washington and took part in the debates and discussions which led up to the formation of this regional wool organization. The incorporation papers for it were signed by five Maryland farmers, all of whom were County or State Farm Bureau Officers; and the organization, as a result, was duly incorporated under the Maryland cooperative marketing act. The Maryland Farm Bureau Wool Pool, Inc., was granted the only membership from Maryland in this organization, and all wool growers of Maryland desiring to market their wool through this national set-up, were required to pool their wool through the Maryland Farm Bureau Wool Pool, Inc.

A very definite campaign for support and tonnage was prosecuted throughout the State. With the splendid cooperation of the Extension Service Agents and County Farm Bureaus, the largest tonnage of pooled wool, under a cooperative basis, ever brought together in this State, was assembled in 1930. A total number of 401 wool growers consigned 103,320 pounds of wool to the pool, or an average shipment per grower of 267 pounds. A total of $22,661.24 was advanced to these growers, first at the rate of 20c and later at the rate of 23c a pound for clear wool. The sale of this wool, however, is centered solely in the National Wool Marketing Corporation. The duty of the Maryland Farm Bureau Wool Pool was to assemble wool. The function of the United Wool Growers' organization was to store, grade, and ship on order of the National Wool Marketing Corporation, all the wool consigned from this and other Southeastern States.

Grain Marketing

As stated previously, the Agricultural Corporation of Maryland had secured membership in the Farmers' National Grain Corporation. The supervision of this phase of work has been under President James W. Davis. Your secretary was a member of a committee consisting of President James W. Davis, A. G. Ensor, Dr. T. B. Symons and himself which attended many meetings in Washington, discussing a regional grain marketing set-up and the possibilities of merging the Eastern Grain Growers, Inc., of Hagerstown, Maryland, with such a regional organization. It was finally decided, however, that such a consolidation or merger could not be accomplished, and the conferees from the various states withdrew.

There was nothing left for the Agricultural Corporation of Maryland, but to begin operations under the membership which it had already secured in the Farmers' National Grain Corporation. Wheat had already been harvested and was being threshed and moved to market on the Eastern Shore of Maryland when the Corporation was released by the breaking up of the conference in Washington. However, by the splendid loyal support of County Farm Bureaus, Extension Agents, and especially the Frederick, Kent, Queen Anne, and Talbot County organizations, a total of approximately 250,000 bushels of wheat were received by the Corporation. The work done by these particular Farm Bureaus emphasizes the importance of the Farm Bureau organization to this cooperative movement. It showed that a commodity organization would be greatly handicapped without the service of a Farm Organization such as the Farm Bureau, to stand sponsor for their cooperative, and to urge its membership to support it.

Co-operative Purchasing

The year 1930, in spite of the drought which many believed would greatly curtail farm activities, will go down in the history of the Farm Bureau movement in this State as the greatest in cooperative purchasing work. The Farm Bureau again putting its support back of the Agricultural Corporation of Maryland, pooled and placed with the corporation a larger volume of business than has ever been done by a cooperative purchasing agency in the State of Maryland before. A total of approximately 23,000 tons of poultry and dairy feeds, besides fertilizer, binder twine, lubricating oil, field seeds, tires and other miscellaneous products were handled. This total purchasing business amounted to approximately $1,225,000.00. It is safe to say also, that the cooperative purchasing business being done through the county co-ops, and other cooperative purchasing agencies in the State, will amount to another one and one-half million dollars. Adding this amount to the Corporation's total will bring a grand total of approximately $2,725,000.00 in cooperative purchasing for the State of Maryland.

Automobile Insurance

The work started nearly three years ago, when automobile insurance was first offered to farmers in this State, through the Farm Bureau Mutual Automobile Insurance Company, has continued and made good progress in spite of the drought, the world depression, the tightness of money, and other conditions. The total number of applications written during the year was 2,985. The total number of coverages was 5,970, the total number of applications written to date, since the start of the work in Maryland, has been 8,950. Seven counties now have more than 500 policyholders in each county. Two of this number, namely, Baltimore and Frederick Counties, have over 1,000 policyholders each. There are only two counties that have less than 100 policyholders. The field force now consists of seventy local agents reaching all counties of the State. Ten of these agents have been advanced to county managers and have charge of other local agents within their respective counties. The State Agent, Mr. A. L. Mylander, who succeeded the previous State Agent, Mr. H. E. Baumberger, and two special agents supervise sales work within the State.

The total number of claims reported for 1930 was 920 and since the beginning of the operations within the State, there has been a total of 1,678 claims. More than $4,000 is paid out each month on claims. The total amount paid since the beginning of the work in the State has been $75,592.35 or an average of $45.00 per claim.

The company reports that the percentage of claims is increasing each year, as well as the amount paid per claim. The records show that one out of every seven farmers has an accident each year, as compared to one out of eight, two years ago.

The claims are handled by two full-time claim agents. County managers, local agents, and authorized repair shops assist very materially in handling these claims. The company has six authorized garages in the State. The total number of cancellations to date, in Maryland, has been 1,508. More than 75% of these cancellations are because of lack of money with which to pay the premium call.

Transportation

One year ago I reported that our efforts to secure a storage in transit rate on grain from the Eastern Shore to Baltimore had been unsuccessful. Such a rate, however, was put into effect this past year, and we believe that cause for this, more than anything else, was due to the pressure put on by Mr. Davis, through the Agricultural Corporation of Maryland.

The more than 1,000 car-loads of dairy and poultry feeds handled and distributed by the Agricultural Corporation of Maryland makes a volume of business that is very attractive to the railroads. The railroad which had refused to give the storage in transit rate on grain up to this time desired, however, a larger amount of this feed business. They were told that if they would give us the storage in transit rate on grain, then a larger amount of the feed business would be turned their way. Shortly after this proposition was made to them, the storage in transit rate was put into effect.

An individual local organization would not have been able to make a dent in putting through this proposition. It was a pure case of trading. We had something they wanted, and they had something we wanted. The fact that you farmers cooperated and placed this large volume in tonnage in central hands made it possible for us to get for you other benefits that were also a great saving in dollars and cents to the farmers of one section of this State.

Daily, there comes to the desk of your State secretary, a docket bulletin of the General Freight Committee of the Trunk Line Association. This bulletin tells us, each day, the changes that are contemplated in the rate structure in this freight territory. From this bulletin, we have been able to pick up and help to check increases in rates in coal, feedstuffs, livestock, fruits and vegetables.

Likewise, we have a transportation department of the national organization cooperating with us in this activity. No individual farmer could begin to handle the details connected with this phase of the business which can take large sums of money from his farm income each year.

Your State organization, working upon a definite request of several of its county groups, had its attorney to appear before the Public Service Commission in Maryland in reference to truck hauling franchises and permits on the Eastern Shore of Maryland and was able to help check the wholesale monopolizing of territory by the subsidiary truck companies of one of our largest railroad companies. If these applications for permits and franchises had been granted, the many independent truckmen who had built up this business and had been rendering a real service to the farmers and merchants of the territory would have been practically put out of business. However, I am glad to say these applications were refused.

Daylight Saving

The daylight saving movement has been something that the farmers have fought for years. It has meant that the city would operate on a different time schedule from that of the farmer, thus causing a great inconvenience to the farmers in the interchange of trade and business with the city.

The farmer has been unable to change his time schedule in the country because of weather and other conditions over which he had no control, thus confusion and inconvenience have existed throughout the summer season while the city daylight saving plan was in effect.

A determined effort was made by the Baltimore Association of Commerce this past year to put daylight saving into effect in Baltimore, and they were successful in the main in having this proposal given a trial. A determined fight was made by various agencies, however, in which your organization joined. We likewise contributed funds to help finance the campaign against it. The moving picture interests of Baltimore were among the main opponents to this proposal and did excellent publicity work. As the result of this very determined campaign, the whole proposal was put on the ballot in the recent election and the citizens of Baltimore voted their contempt of the whole proposition by voting down daylight saving for future summer operations.

Publicity

Your organization has continued to cooperate with the American Farm Bureau Federation in sending the Bureau Farmer to its members, also to all the insurance policyholders in counties not having county Farm Bureaus, likewise to a selected list of non-members throughout the State whom we desire to have as members in the organization.

James M. Hoblitzell has continued to edit the Maryland section of the Bureau Farmer. At the Directors' Meeting of the organization on October 13th, a communication from Secretary M. S. Winder of the American Farm Bureau Federation was read, outlining that the American Farm Bureau Federation desired to take over complete control of the publishing of the Bureau Farmer.

Although it has had full control of the editorial policy, it had not had control of the business end. A definite financing plan had been worked out with the owners of the Bureau Farmer Publishing Company, whereby the American Farm Bureau Federation was to take financial control of the paper. Maryland was allotted a certain amount of stock to purchase in order to make this effective. The Directors at this meeting in October, voted that the Maryland Farm Bureau Federation would subscribe to the stock allotted to it.

Beginning with the January, 1931, issue, the paper is being published under the full control, both editorial and business, of the American Farm Bureau and those of you who have received your copy will note the very material improvement in the make-up and quality of the paper.

This office has continued to send out at various times news releases on Agricultural subjects to the country and city press of the State.

Legislation

The Legislature of Maryland was not in session in 1930, but the Federal Congress in Washington has been in session and there have been many matters come up which have had our consideration.

Our point of contact at Washington naturally has been our National Legislative Department. Upon the request of Chester H. Gray, this office has often appealed to our Senators and Congressmen for their support for or against pending legislations.

The coming year of 1931 will, no doubt, be a busy one for your State organization and your State officers in supporting or opposing legislation that will be proposed at Annapolis.

Livestock Marketing Conference

Your State organization was requested to have a delegation from Maryland meet in Washington at the Farm Board office with similar delegations from other states to discuss the feasibility of organizing a cooperative livestock marketing organization for the Eastern Seaboard Territory taking in primarily the markets of Baltimore, Jersey City, and Lancaster. The delegation from Maryland consisted of Charles T. Cockey, Jr., J. W. Jones, K. A. Clark, Dr. S. H. DeVault, and M. Melvin Stewart. Mr. J. W. Jones and Mr. K. A. Clark at that meeting were named on a sub-committee to continue investigations and study of this proposal.

Marketing Conference

Your organization cooperated with the authorities at the University of Maryland, College Park, this summer in their marketing conference.

Your President and Secretary had places on the program to discuss grain marketing, wool marketing, and cooperative purchasing. The conference, although not as largely attended as hoped, was very successful and Dr. Pearson, Dr. Symons and the others in authority at the University of Maryland are to be congratulated for inaugurating this movement.

Southern Region Training School

In September upon the invitation and mainly at the expense of the American Farm Bureau Federation your secretary attended the Southern Region Training School of the American Farm Bureau at Marshall, Texas, and addressed the school on three different phases of Farm Bureau work.

Meetings, Picnics, Etc.

Great amount of time and expense is consumed by your secretary attending various State, County and Local meetings, picnics, banquets, etc.; all this usually upon invitation and for the purpose of giving information of Farm Bureau activities and to help build a sense of organization consciousness and responsibility.

Boston Annual Meeting

Then we must not leave out the wonderful, inspiring annual meeting of the American Farm Bureau Federation in Boston on December 8th, 9th, and 10th, where we had an enthusiastic delegation of sixty-seven people. And how that group could sing! We won the song contest, and to prove it, look at that banner.

Membership

Last, but not least, is the membership problem. The Farm Bureau slogan, "There is no substitute for membership," is one that our farmers and farm leaders should never forget.

Your State organization, in cooperation with those county organizations which showed interest and would cooperate, made an especial effort to strengthen and increase the membership in 1930. Two new County Farm Bureaus were organized in Cecil and Wicomico Counties.

By referring to the financial report you will note that the State organization alone spent $5,042.62 in employing field men to do membership work. As a result, we not only held our membership number of 1929, but in 1930 showed an increase of 384. This is in spite of the world depression and the unprecedented drought, with the resulting collapse of the farmers' market and the great shrinkage in his income.

You often hear that "the farmer won't stick." This is both true and false. There are a certain number that are organization-minded and will stick on and on. The big majority, however, are in and outers. You can go to them, sell them to the idea and benefits of organization. They join. Then, because, something tangible in actual dollars does not fall into their lap, or because some enemy or profiting speculator knocks the organization, they drop out. Their benefits must be in hard cash, and something that their nonmember neighbor does not receive. The many intangible, public service benefits seemingly don't count. That is what makes it so heart-breaking and discouraging.

We actually sold over 1,000 farmers to membership this year, but because of this great turnover, can only show a net increase of 384, and it is for that reason that I have been trying to find a solution to this membership problem, of how to prevent this constant turnover.

For over four years I have been maturing a plan. This I submitted to the Directors in October. They unanimously voted that a committee study and analyze it. Nothing has been done nor will it be done as long as a certain minority (occupying position of power and representing rival organizations) can block it. Under my permanent membership plan we would have had practically no losses and a gain of 1,000 members this year instead of 384. Think of adding 1,000 or more permanent members each year. It can be done.

I know from personal canvas that the majority of our county leadership is favorable to the proposition. However, they do not wish to become involved in a controversy.

As I have been the one full-time, paid, executive officer of the Maryland Farm Bureau whose responsibility it was to direct its detail activities and to supervise the maintenance and strengthening of its membership, I felt it only right and proper to step aside, when I saw there was nothing in the future but the same old problem and no attempt to solve it. I did not feel that I wanted to be held responsible any longer for future of the organization, and that it would be better for another to take the driver's seat. Hence, I accepted one of several flattering propositions that I had offered me. I have been made to feel, however, that my work has been appreciated by reason of the many requests that I reconsider my resignation of November 14, 1930, from individual directors, county officers and from the hundreds of members throughout the State.

An organization, however, must have a program of service, and it must also try to strengthen its weak spots. But in its endeavor to serve other organizations, it must be careful that it does not do all the giving and serving and that it doesn't build up that which will destroy it sooner or later. They should all grow strong together.

The Farm Bureau to maintain its membership morale cannot depend upon the necessary but intangible services of education, legislation, transportation, and other public service efforts.

The membership demands tangible activities in purchasing and marketing. With these being performed by the commodity groups, how is membership to be maintained?

Hence, my constant urging that there be a definite legal tie-up with the Agricultural Corporation of Maryland, thus making both organizations legally one, so that as the purchasing and marketing service increases in strength and volume, it can be pointed to as a definite service of the Farm Bureau, and will help build strength in the Farm Bureau.

Likewise, that there be no possibility of a splitting away of one from the other. When the State tie-up is accomplished, then it will become the duty of tying in the county co-ops. We must have coordination, efficiency, and cooperation and not competition among one another if we expect to match wits and strength with the speculative agencies that have been and are preying upon the farmer.

I want to take this opportunity to publicly express my appreciation for the many courtesies shown me by Mr. Cohill and Mr. Davis, the two Presidents under whom I have served since the beginning of the Farm Bureau in this State. Likewise, to the Directors, to the various County and Local Community Farm Bureau officers, to the officials of the University of Maryland, to the Extension Service, to the Vocational teachers of Agriculture, to the officers and directors of our various Affiliated associations, and to you splendid people who compose the rank and file of the organization.

We have a great objective in the Farm Bureau and that is that there shall be on every farm a happy and prosperous family enjoying an American Standard of Living and the income from the farm to pay the bill.

We want "Equality for Agriculture". It's going to take the "everlasting team work" of every individual and organization to attain that objective.

I pray our farm leaders in this State will get the vision.

It is with regret that I close my official career with this organization. I have given eight of the best years of my life to it. I am proud of our record, only I wish we could have done more.

The friendships I have made are many. When the going was hard and morale was low, it has been the helpful advice of a Farm Bureau, or Extension Service, or other friend and the loyalty of you good folks that has smoothed the road and bucked up my own morale. For this I want to thank you from the bottom of my heart.

You have a new Secretary-Treasurer taking the helm. He will need your confidence and support. May I ask for him the best in loyalty and cooperation that you can give? I hope he can bring to you a new hope, a clearer vision and a greater enthusiasm and zeal for service. The job to be done is immense, in fact, staggering, and the discouragements many. I beg of you to help him.

Maryland Agricultural Society-The Maryland Farm Bureau Federation Treasurer's Report

Statement for Period from January 1, 1930, to December 31, 1930

INCOME

County Dues (2,727 Members)	$ 8,181.00
Subscription to Co-op.	1,369.50
A. F. B. F. Dues	1,369.50
Associated Membership Dues	160.50
Non-F. B. County Members	98.00
Farm Bureau Organization Expense—Refunds	356.89
Medals—Refund	75.00
Traveling Expense—Refund	250.00
Auto Insurance Commissions	3,192.52
Auto Insurance Renewals	4,880.50
Office Expense—Refund	354.70
Rent, Telephone and Telegraph	1.16
Annual Meeting, 1930	1,539.50
Bonding Expense—Refund	41.00
Rent	1,940.00
T. Fair Expense—Refund	1.58
Interest Earned	50.22
Total Income for Period	$23,861.07
Bank Balance January 1, 1930	3,295.14
Available Cash	$27,156.21

DISBURSEMENTS

Legal Expense	$ 100.00	
Furniture and Fixtures	491.97	
Farm Bureau Organization Expense	5,042.62	
Home and Community Organization Expense	22.38	
Wool Marketing Organization Expense	60.00	
Daylight Saving Campaign	50.00	
Medals	95.00	
Traveling Expense	1,502.63	
Board of Directors Expense	641.59	
Salary Secretary and Treasurer	4,200.00	
Salary Clerks	2,331.33	
Salary Publicity	360.00	
Salary Accountant	165.00	
Publicity—Bureau Farmer	975.95	
Dues A. F. B. F.	1,392.50	
Office Expense	1,349.87	
Rent, Telephone and Telegraph	2,792.03	
Annual Meeting Expense 1930	1,749.33	
Annual Meeting Expense 1931	318.00	
Bonding Expense	63.00	
Auto Expense	43.90	
T. Fair Expense	54.92	
Total Disbursements		23,802.02
Bank Balance December 31, 1930		$ 3,354.19

CHAIRMAN MASSEY: The Committee appointments will be read to you by the Secretary.

SECRETARY STEWART: They are as follows:

Committee on Credentials:

H. H. NUTTLE, *Chairman*
CHAS. T. COCKEY, JR.
C. A. DUVALL
WILBERT SMITH
R. N. STAGG, JR.

Committee on Resolutions

E. THOMAS MASSEY, *Chairman*
W. S. SPENCER
G. W. F. INSLEY
CHAS. I. BOYLE
D. B. MCDOWELL
ROY C. F. WEAGLY
GEO. W. HUBBARD
CARROLL LOWE
J. W. JONES
J. W. LORD
R. SMITH SNADER

CHAIRMAN MASSEY: A good many years ago in going over the names of the States of the Union, there was one state by the name of Alabama that always attracted me. I always associated that name with cotton, with sunshine, with hospitality. That state has given to the National Federation its Vice-President, and he is a very genial gentleman. I have seen him at these national meetings for the last five or six years, and I am always pleased to hear him talk. Some one told me the other day he was very fond of honey. It gives me great pleasure, and it is our great privilege to have with us Mr. Edward A. O'Neal, President of the Alabama Farm Bureau, and Vice-President of the American Farm Bureau Federation. Mr. O'Neal. (Applause.)

ADDRESS

BY EDWARD O'NEAL

Chicago, Illinois

This program was set up at our annual meeting at Boston, Massachusetts, December 9-10, at which 34 state farm bureaus were represented by 49 voting delegates. These delegates represent at least ten million farm people, over one-third of the agricultural population of our great nation. The delegates are leaders in their respective States, and know the needs of their farmers. They represent the largest business in our nation today; organized business, if you please. Many of them are at the heads of cooperative business organizations of farmers whose volume runs into hundreds of millions in buying and selling and service to their membership. The organizations are most efficiently and economically operated, too. No other business groups can show as low costs as do the farmer cooperatives.

In writing the program, we were looking forward to immediate needs of agriculture in the nation and in our respective regions and states. We could look back with pride to eleven years of accomplishments of our organization; the largest in the world. We take further pride in the fact that through all these years we have not hastily adopted policies, and, therefore, it has not been necessary to reverse our position. So, our first resolution of the twenty-seven outlining our policies is a re-affirmation of our former policies, which we make without hesitation.

As chairman of the resolutions committee now and for the past six years, I wish to call your attention to the fact that at the annual meetings of our state farm bureaus resolutions are adopted. These resolutions represent the needs of all sections and all types of agriculture. These are sent in to the resolutions committee annually. As a whole, however, most of our great state organizations depend on the national organization to write the needs of agriculture. This is not laziness on their part, but shows that the state organizations have the utmost confidence in the federation and that we have a real federation of state organizations that cooperate and work together for the good of American agriculture. While the representatives of each section, and there were six of us, one from the South, three from the Midwest, one from the East, and one from the extreme West, well represented their respective sections, yet there was easy agreement in the group to the program that we set down and recommended to the convention of delegates, which adopted them practically as written. This committee felt their grave responsibility to the millions of farmers and farm homes throughout our land, for after all our organization, to a large extent, speaks for agriculture in our nation.

It was fitting that our organization should meet in the heart of the great industrial financial section of our nation. It is most important that they understand us and we them. They frankly asked that we set in with them on two occasions during our meeting and tell them of our needs. Their leaders frankly stated that industry, finance and agriculture are intimately related; that they, too, are suffering under our present economic conditions and that our problems are most interesting to them.

It is important that every member of our farm bureau in the respective states understand our program as expressed in our 27 resolutions. They show the immediate needs of American agriculture. With your leave, I am going to sketch briefly these important expressions.

Agricultural Marketing Act

We express our strong support and cooperation with the Federal Farm Board and their administration of the agricultural marketing act. Their action in establishing national commodity sales agencies, we approve, for in each of our respective states we are helping to organize the farmers under this plan, and we highly approve of the Farm Board's refusal to create more than one national agency for one commodity, and we further urge that there should not be competitive regional agencies established. This is most important for there should be no duplication of activities in our respective states and regions and we express our hope that other national sales agencies for our farm commodities will be established in the near future. We all realize the fight that is being made on the act by selfish interests whom as Chairman Legge has said: "feel they have the divine right to profit on us," and we strongly oppose amendments at this time. We reserve the right, as we should, that when any amendments are proposed that they come from agriculture. The time is not ripe now for amendments.

We farmers should fully realize that we have a real fight; other groups are organized with ample funds. In our own section of the South these groups are fighting the cooperative marketing of cotton and the cooperative purchasing of feeds. The selfish groups in the Chamber of Commerce of the United States started this fight.

We fully endorse the stablization activities of the Federal Farm Board in wheat and cotton. They saved the bottom dropping out in these two commodities. We feel that they should extend their activities in the stabilization to include other farm crops, including those not having a surplus. Many of our marketing associations, both large and small, are not in position to carry on stabilization without outside assistance. We frankly ask for a large revolving fund for this purpose. It is in the interest of the general public; especially for we farmers. Our marketing system is so seasonal that we are forced to dump even where we do not have a surplus; in fact, the law of supply and demand is not allowed to work.

It is up to we state farm bureaus to help organize our farmers. The farm bureau has been the greatest aid in building national commodity groups so organized by the members of the Federal Farm Board. We must continue our activities more zealously to organize American agriculture. The Federal Farm Board has recognized the American Farm Bureau in the set up of these national commodity groups in having representatives on the boards of directors.

Regulatory Legislation

Closely connected with our marketing activities necessarily comes regulatory legislation to minimize speculation in farm crops and we ask that the Secretary of Agriculture have a broader exercise of power over grain and cotton exchanges, and for further legislation, if necessary, to give him this power. Short selling should be safeguarded. Dealers on the exchanges should be carefully supervised.

As Chairman Legge of the Federal Farm Board has said:

"The rules and regulations of our exchanges today were built up by traders themselves and for their own benefit. They are not built in the interest of the producer or consumer. The present regulations have no teeth in them. Under the present hedging system, nobody has any interest in the price of wheat after it leaves the farmers' wagon, except the traders in the pit, and then only about half of these traders wish to keep it up. They do not care whether the price goes up or down. Neither the producer or consumer is sufficiently represented in the operation of the present system."

Might I say here that this same thing applies to the cotton exchanges. What chance have two million cotton farmers, the majority unorganized, against a few hundred cotton merchants and manufacturers?

Drought Relief and Unemployment Legislation

We rightly ask Congress to assist in relieving the drought and unemployment situation. Large sections of our country have just gone through the most severe drought of our history. Thousands of farmers are left without food and feed for themselves and their livestock.

We highly commend President Hoover's message to Congress on this subject. We feel that our great government should not be niggardly at this time. And, we farmers are willing to get together with other groups to restore national prosperity. A nation which can spend billions as we did in the recent World War can most assuredly solve its own problems, and we should use its vast resources for this purpose.

Waterways

We farmers furnish over 40 per cent of the freight of the nation. We know that freight plays a large part in our heavy cost of distribution. We have a broad program for waterway development. We stand behind the Rivers and Harbors Act of 1930, and we urge that ample funds be appropriated by Congress to carry out this act. Congress could well afford to appropriate billions for this just as they did in the World War. As Secretary of War, Hurley, said recently in addressing the Mississippi Valley Association in St. Louis: "Our government had supported all national systems of transportation during their difficult periods of development. They helped the railroads to the extent of grants of 155,504,000 acres of land, and equally as much financially. Our cities and counties and states donated many millions more. The census of 1870 showed outstanding bonds amounting to 185 millions after many were retired. This does not include numberless other grants of rights of way, terminals, docks, etc., given the railroad. Let our government be statesmanlike and farsighted and develop our water transportation, including conservation by reforestation of our water sheds, development of power and flood control.

Agricultural Credit

We are fighting for agriculture to have credit as easily available as other groups, and under our Federal Reserve System our rural credit system has fallen down, "in fact, in many sections of our country our farmers have no basis of credit, while in our great financial centers money is cheap. We should be closer to the Federal Reserve System which has proven so fine for American finance, and we ask President Hoover to give agriculture representation in the membership of the Federal Reserve Board as is provided for in the Act itself." We decry the speculative uses of money by certain groups in our nation.

We ask that agriculture be given a large revolving fund to stabilize the Federal Land bank bonds. The Federal Farm Loan system has failed to meet our credit needs, and has fallen down when most needed. We feel the Act has not been well administered. We want to amend the law, if necessary.

We ask that a committee be appointed to make a careful study of the possibility and feasibility of further development of our cooperative rural credit system. Our cooperative marketing associations have had, in most instances, good basis of credit, especially with the commercial banks, but production credit is still too costly. We are paying in large sections of our country 25 to 35 per cent interest for this.

Chairman Legge says: "That today most farmers receive only 20 to 30 cents out of the dollar the consumer pays for his product. The remainder goes to pay the cost of distribution and the largest percentage of this cost is for so-called services rendered by brokers and other agents. This results in greater concentration of wealth in our big cities."

As Dr. Warren of Cornell so aptly said at our national federation meeting in Boston: "Since the charges for distribution become receipts for persons living in cities, a declining price level results in an enormous transfer of wealth from country to city. City persons must spend this extra income, a large share of it goes to better housing conditions. This results in a building boom in cities, while buildings in the country deteriorate. Such a building boom accompanied the declining prices in England following the Napoleonic Wars. A similar one, in America, followed the Civil War. A world-wide building boom in cities has accompanied the present agricultural depression. A building boom cannot go on forever. When it is overdone, reaction occurs. Following the Civil War, the reaction came in 1873, nine years after the deflation began. Following the World War the reaction came nine years after deflation began."

Tariff

The tariff is part of our national agricultural policy. We ask for the American market for the American farmer. We fully realize that as our nation grows larger we have become a great creditor nation. It is estimated that foreign investments of Americans are now in the neighborhood of 25 billions, and that the figure is increasing by a billion or more yearly. Our nation is rapidly becoming an exporter of industrial products. We were once industrial importers. Now, in order to pay for industrial exports largely increasing quantities of agricultural commodities are being imported. We farmers are going to have to fight for the American market because competition is keen with foreign imported agricultural commodities. Every subterfuge is being used to evade the tariff act by importation of raw materials, or manufactured articles. Vegetable oils, starches, sugars, hides and the like are being brought in in increasing quantities. We ask protection against tropical sections of the world, especially the Philippines for whom we ask independence. Frankly, my friends, the importation of vegetable oils has destroyed the market for our cotton seed oil and has made strong encroachment on the marketing of our hog, beef and dairy products.

Other groups have full protection through the tariff—protection from the low labor standards of other sections of the world in order to maintain the high standards of living for our working people, have we not the right to claim the same protection for our farmers? Must we become peons and slaves and give over our home markets? We have a difficult enough problem in handling our surpluses. I appeal to the patriotism of the American people to help our farmers in this.

The violation of this principle is evidenced by the large importation of foreign wood pulp by our paper manufacturers. They have high protection under the tariff of their product. It seems to me they are a most selfish group and are very shortsighted in their policy.

Preservation of Natural Resources

We frankly realize that the preservation of our national resources such as navigable streams, water power, forests, soil, oil, coal and the air are necessary. They have been exploited by great corporations. In some instances these corporations give great service to our people, but in many instances they have profiteered on the masses for selfish purposes. The public welfare should be thoroughly guarded. We have asked the government, who gave them their corporate rights, to inquire into their methods of capitalization—especially should this be done in the case of public utilities. We are opposed to their acquiring our great natural resources of water power with privilege of lease operation virtually perpetual. We also ask that limitation be made on the earnings of their actual capital investment. And, in order to protect the general public we ask the President to employ special counsel to defend the Federal Power Act.

Muscle Shoals

This ten-year-old question is unsettled. The farmers of our nation are still paying heavily for fertilizer. There are more and more sections of our country having to use fertilizer. Our production costs must be kept down. We do not like paying tribute to foreign governments and cartels in the price we pay for nitrogen. We stand for fertilizers for agriculture at the Shoals. We want Uncle Sam to retain the title. We want all the power necessary to be used for the production of fertilizers and the remainder to be disposed of, so as to benefit agriculture and preserve the public interest.

We feel the time has come for us to make Congress a proposition to lease and operate the plant. We are thoroughly capable of doing this as we have shown in our cooperative efforts in purchasing and marketing. Last year the farm bureau states, through their subsidiaries handled a business of over 70 millions in cooperative purchasing. The voting delegates authorized our board of directors to appoint a committee truly representative of agriculture and this committee was authorized to develop and organize a corporation, the purpose of which would be to lease and operate Muscle Shoals on a cooperative basis to manufacture fertilizer for our farmers. This was the purpose for which the Muscle Shoals was developed, and we feel that we are capable of bringing this about.

The board of directors appointed the legislative committee, consisting of Messrs. Hearst, Putnam and O'Neal, to tackle this problem. We are now waiting the action of the conferees on the Shoals, as we do not want to interfere with them.

Funds for Agricultural Extension

The farm bureau is an organization originally set up by county agents, and continues to work in closer cooperation with the county agents than any other farm organization. We naturally ask the county agents to cooperate in advancing our economic and cooperative marketing program. In order that they may do this more effectively, we urge Congress to provide ample funds to further agricultural extension work, that the representatives in this work be removed from local influences antagonistic to cooperative marketing, and their work be correlated with the work of the Federal Farm Board and farm organization. Many selfish groups throughout the nation are attacking the county agents' work, especially when those agents are helping farmers in their problems of cooperative purchasing, marketing and organization.

Marginal Land Problems

One of the greatest problems of American agriculture today is our marginal lands that are unprofitable in production. These marginal farm lands should be set into forests or put into public parks for our rapidly increasing population, or into grazing areas. Congress has already passed national legislation which provides for repossession of marginal lands, the planting of them into forests for forestry research. The program is not being carried out because there are no funds available. Therefore, we strongly urge appropriation for this purpose and in this program there should be hearty cooperation between Federal and State governments. Our state governments should remove the tax burden from newly planted forest areas. This has been done in certain states.

We farmers are strongly in favor of all matters relating to land, or reforestation to being placed in the United States Department of Agriculture. I have already mentioned the necessity of reforestation for conservation of water supply and flood control. If our marginal lands were reforested we would not have our annual disastrous floods destroying millions in property and life. Our streams would be navigable throughout the year and there would be ample water for irrigation purposes and water for hydro-electric development. The government should not be niggardly in appropriating ample funds to carry out this program. It would be the best investment Uncle Sam has ever made directly or indirectly. It is impossible for private capital to carry out this conservation policy alone. Our government should set an example here to private initiative in business. Private capital has shown some very outstanding results in reforestation. They have shown us that it is the greatest success from an economic point of view.

Engineering Experiment Stations

We need these stations in connection with our land grant colleges. Agriculture needs engineering as much as any group in our nation. We are opposed to these stations being established at the state universities. They are fighting us and we want our own—that which rightly belongs to us. Commerce and industry are perfectly able to pay for their own experiments.

Stabilization of the Unit of Value

Sir Joseph Stamp, the great English economist, who represented Great Britain in the Young Reparation Conference recently, said to a group of business men in New York: "That while our business conditions are adversely effected by many uncontrolable and partly controlable causes, all the way from weather to psychology, there is one constantly acting cause which is possible of a very considerable degree of control; namely, the instability of our unit of value. We may never be able to make the dollar as invariable a unit as the yard and the gallon, yet we can undoubtedly prevent its fluctuation to the extent of 300% as has happened in the past."

"We have accomplished some of this task through the Federal Reserve system, but there is yet much to be done. The value of the dollar is fundamental. It is our most important commercial unit. We have taken a lot of trouble to stabilize our other units of measurement."

Dr. Warren of Cornell, whom I have already quoted, says:

"That the present depression is due to monetary conditions rather than to the law of supply and demand."

We farmers all realize the effect in the payments of our mortgages and interest. We want stable money, of course. We want the best brains in this country to study this question so we ask that President Hoover appoint a representative commission and make a study and report to Congress.

Patent Legislation

Patents are given by the United States Government to protect the owner. We rightly ask for legislation which will require the owners of these patents to produce the commodity covered by this patent, in our own country. One of the modern trade practices is for the owner of a patent to manufacture in foreign countries and import these products into our country destroying the home market. We wish this stopped.

Postal Affairs

We stand for efficiency and economy in the operation of the post office department. We are against raising the rates on certain classes of mail. We feel that efficiency, economy and increasing the volume of business constitute the best method to make the department self-sustaining. We advocated and appreciate the establishment of a director of parcel post who will direct his time and energy to the development of the parcel post business which is most vital to our farmers.

Butter Substitutes

In spite of all the protection we can give to our dairy farmers, there are increasing amounts of imported vegetable oils used in making butter substitutes. We ask a Federal tax on oleomargarine to protect us against this subterfuge. We ask that butter be used in Federal and State institutions instead of oleomargarine.

Transportation Matters

We rightfully thank the railroads for the splendid concession they made us in freight rates in our drought areas. We still think that agriculture should be recognized in transportation matters as set out in the Hoch-Smith resolution, and in spite of the decision of the Supreme Court and rulings of the Interstate Commerce Commission on this question. We feel that study of the general economic influence from the consolidation of our railways should be continued before such a consolidation is put into effect by our Federal government. I frankly think the Interstate Commerce Commission has not recognized that we farmers are an important part of our great American system and pay a heavy percentage of the freight.

Radio

We ask for agriculture the allocation by the Federal Radio Commission of such wave lengths, clear channels and power as are necessary to preserve our rightful interests in the air. Farmers cannot get their message over the radio due to the control of diverse interests in many sections of our land. They have a right to ask for this protection of their interests.

Commending Secretary Arthur M. Hyde

We farmers feel we are most fortunate in our present Secretary of Agriculture. He has handled with promptness and courage many matters antagonistic to the American farmers, such as short selling of wheat on the Chicago Board of Trade. He has shown statesmanlike approach to all questions of agricultural interest, and his knowledge and sympathy for the welfare of we farmers we deeply appreciate.

Education

We are guaranteed equality of education opportunities under the terms of our constitution. Great sections of our nation have contributed to the wealth of our industrial and financial centers. This wealth should be contributed back to the education of the rural child. We are on record in favor of the Briand bill for the appropriation of one hundred million dollars for aid to rural education. We are opposed to the suggested per capital appropriation of federal funds as this would not be fair to the rural community. We are emphatically against this and we are for federal aid along well established lines. We want the administration of federal funds in sympathetic hands, like our well established projects.

Truck and Bus Regulation

We feel the need of regulation of this form of transportation on our public highways by a proper federal law. We want them left competitive, however, just as we do waterways. We feel that the Interstate Commerce Commission should not have the control of this form of transportation. It should not be on the same basis as railroads. There should be a separate regulatory body.

Children's Bureau

Since 1928 we have been soliciting the promotion of the health and welfare of mothers and infants by the Federal Government. At this time there is a bill before Congress for the appropriation of $1,000,000 per annum for this work, which is most likely to be passed. Our women leaders of this country object seriously to this work being taken over by the Department of Public Health. This legislation is particularly requested by our Home and Community Department.

Constitution Amendment Regarding Aliens

Aliens should not be counted as citizens and should not be allowed to vote. In a number of our great cities they do vote and as a result these sections have more representatives in Congress than is their right. It is not fair to our rural sections.

Farm Wastes and Industrial Outlets

It is very vital to agriculture that, just as it is in industry, we have an outlet for all our products and wastes. We find that we have very keen competition in our own industry from foreign farm products and wastes. We must get additional markets for our products. We have many conflicts even among our own citizens. Why should our dairy farmers fight the tariff on black strap molasses when their products—butter, cheese, and so on—are very highly protected? This does not seem consistent, nor does it seem consistent that we should import materials for the manufacture of starch; or that we should import dried eggs, and we have ample material in the low grades of grain and potatoes to manufacture alcohol. Why import Cuban black strap molasses? Why should we, as I have said before, import vegetable oils when we have ample by-products of meats and cottonseed oil and soybeans produced in our own country in large quantities. Might I go further and say there is no excuse for the heavy importation of jute? Surplus cotton would be used if substituted for jute.

To develop more uses of by-products we urge the development of a national laboratory for this purpose.

Predatory Animal Eradication

A great section of our nation is yearly threatened by predatory animals and rodents. Funds have been appropriated for this purpose, but not enough to eliminate the rodents. A ten-year program has been agreed on and ample funds should be allocated for this purpose.

Taxation

This is one of the serious problems of the farm today. We are burdened with unfair taxation. As a whole we are paying 30 per cent of our net incomes (in many instances nearly all) for taxes, while industry and commerce are paying only about 10 per cent. Our taxes are continually rising. Our property tax system is out of date. A small percentage of our national income today comes from the ownership of property and therefore a great portion of our population is not now paying taxes. This is not good for government or good for our people.

We have had a very splendid committee studying taxes. Their report, we approve. They reaffirm the entire series of resolutions adopted last year with only slight changes. These changes favor a more efficient method of assessment and a full explanation of what the Indiana plan of proper control of budgets, bonds, and expenditures means.

The tax committee further recommends that the American Farm Bureau call at a very early date representatives of all groups into conference to discuss the formation of a national commission on taxation which commission shall study and recommend action on such problems as follows:

1. Coordination and re-allocation of taxing power between the Federal Government and the states.

2. Recognition by state and national governments that education and highways are largely national problems and the burden of their support should be equitably distributed.

3. Cooperation of all national groups in the proper reorganization of taxes in districts and political subdivisions. (There is too much local self-government in many of our counties—enormously expensive.) The establishing and control of budgets and bond issues by tax payers. Better methods of assessing and levying taxes. Most rigid economy in expenditure of public funds.

4. New sources of tax in order to reduce the present property tax, especially on real estate.

5. Use of the power of Federal Government to eliminate unfair competition among the states in their taxation systems.

6. Establishment of permanent national commission on taxation with ample funds to study taxes.

I feel that this is one of the most important things that our farm bureau can do for our nation. We ask only for equality. We are the most unselfish group in the Nation today. Sometimes I feel we are the only statesmanlike group left in our Nation. Lets sit around the table with other groups and work out a policy for safety of our government in the future. Just as our farmer forefathers wrote our Constitution in '76, let us write a tax constitution, fair to every class and to every citizen, in every section of our great Nation. Economic conditions have changed. Let us take warning from what is happening in other nations today. Our very rapid centralization of wealth requires that we become federalists, if we are to have equality of opportunity in our Nation. A grave responsibility rests upon the leadership in our Nation today. As Will Rogers, our great humorist and philosopher has said, "We fought the World War for democracy and there is practically no democracy left in the world today."

Now, my friends, you will see that we have undertaken a broad program. Our success in the fulfillment of our program depends largely on our membership. Organization is the most powerful force in our Nation today. America speaks through organization. Americans worship organization. Let's organize the American farmer under the banner of the American Farm Bureau. This will assure equality for agriculture, and the future of America, the world's greatest democracy!

CHAIRMAN MASSEY: I could have stopped Uncle Ned, but I didn't want to have any argument. Then again, I looked over the crowd and I know all of you have somebody to milk for you tonight.

You all know the past. Some of you want to know the future. You see, we have a friend with us today who is going to tell you what is ahead of you in agriculture. It gives me great pleasure to introduce to you Dr. R. A. Pearson, President of the University of Maryland. (Applause.)

DR. R. A. PEARSON: Mr. Chairman, Mr. President, Fellow Members of the Farm Bureau Federation: It was suggested to me in view of the lateness of the hour it might be better for my talk to be postponed until tomorrow. But I did not accept that suggestion out of kindness to you. Our previous speaker has raised us to great heights, and I am afraid if some of you go out of this hall you would have to fall so far to get down to normal again, you might get killed. I am going to speak to you for a little time to help you get down.

It is a fine opportunity to talk to such a fine gathering of Maryland farmers, and I am too wise to think that you are in this room at the present moment because you want to hear me. I think you have remained until this time because the previous speakers were so interesting you couldn't get away, and now you are still here because you are too tired to get away! (Laughter.)

I have greatly enjoyed and profited by the splendid talk of this splendid man who comes from a great state, who occupies a high position, who has told you about the old mother national organization, her platform if you like, things that we do need to know. His address is worth all that it has cost to come here, and I certainly do not begrudge him a minute of my time. I am just glad that he did it. (Applause.)

I must say, too, that we have here a couple of fine reports from our President and from our Secretary. They are farseeing men, and I know I join with you in an expression of regret that our Secretary and his splendid wife are to leave our state. Our good wishes surely will go with them down to North Carolina for their great success and their great happiness. (Applause.)

I am here to wish you all a happy New Year. I know something, I know a good deal about what the farmers have had to experience in 1930. Some of them just barely have been able to hold down, and some few have been like that old lady who was in a runaway accident. She was telling it to her friend. She said, "You know, the old mare kept running, and running, farther and farther, and we got to going down hill, and I just hung on tight and trusted in the Lord until the breeching broke, and then I jumped!" (Laughter.) And that applies to not a few farmers.

ADDRESS

BY R. A. PEARSON

University of Maryland, College Park, Md.

As a preliminary let us look briefly at a picture of agriculture as it ought to be—the picture that often is in the minds of leading farmers and farm leaders everywhere, and let us remember always that agriculture is a matter of importance to every human being and that it will be at its best only when it serves best our great urban population as well as when it serves itself best.

As We Would Like to See It

We would have this nation maintain her leadership in the production of a great variety of food products and excel in all phases of rural life. We would have farming on the most efficient basis both as to production and the disposal of products. We would have the smallest possible losses, such as those due to bovine tuberculosis, hog cholera, poultry diseases, beetles, weevils, borers, smuts, rusts, and fungi. We would sell the products of the farm at the lowest possible price that would provide a reasonable profit for the work of the farmer and in doing this we would ever be alert to reduce the cost of production per bushel or per pound by the introduction of improved methods of raising crops and animals, grading, sorting, storing and selling. We would regard soil fertility as having capital value and endeavor to leave our farms at least as fertile as we found them. We would have comfortable homes on the farms, good roads, good schools, and good churches for rural people, and a high level of community life and activity. We would have scientific research applied to the problems relating to agriculture and the farm home and thorough instruction in all phases of these great subjects.

But it is easier to say what we would like the future to be than to say what it will be. If anyone could know what will be the agricultural situation for the period of the next twenty-five years he could build a fortune that would make the wealth of Ford or Rockefeller appear small in comparison.

A number of factors will determine how near agriculture will come to reaching its ideal in the next quarter of a century. To a limited extent these factors are or may be under our control, and to just that extent we can control our future.

Individual Effort

The most important of all these factors and the one most within our reach and influence is individual effort. The farmers of our state and of the nation through their individual efforts have improved in efficiency far more than non-agricultural people realize. We commonly talk of improvements in manufacturing processes whereby, for example, seven men now perform the work formerly done by twenty, or three men with the aid of newly invented machines now do as much as fifty used to do. Alongside of these interesting figures farmers can say that in 1830 about 83% of the population gainfully employed in this country were engaged in producing food for the total population, whereas now by reason of improvements in agriculture about 26.5% of the population gainfully employed feeds the whole population and with a large surplus to export. The average cow in an average dairy herd produced in 1900, 1,260 quarts of milk, but now she gives over 2,100 quarts and in a good many dairy herds the average cow gives 3,000 quarts in a year. Within the memory of most of us the man time required to produce a bushel of wheat has been reduced at least seventy-five per cent.

Yes, farmers, like manufacturers, are increasing the output per man. Incidentally, it may be said that farmers are just as much concerned as any others about what is to be done to find employment for the many workers in all industries who are being displaced by reason of so-called improved methods. The introduction of many kinds of machines, some of which almost seem to have human judgment, is coming to be a problem in agriculture as elsewhere. The question well may be asked as to whether it is a benefit to human beings or to the nation, to displace so many without finding other useful and profitable ways for them to use their time. Here is one of the great challenges of the day to educational institutions from the primary school to the graduate college, and to the church and to newspapers and labor unions and to those who control moving pictures and radio programs.

Suppose, for example, that as a result of concerted effort our nation should suddenly develop a universial desire to improve the homes! Think of the carpenters and bricklayers and painters who would be given employment and the building materials that would be needed and the nurseries that would be called upon for trees and shrubs and how the sale of furniture would increase and of carpets, rugs, furnaces, stoves, pianos, and art objects; and how many more music teachers we would need. Of course, it will be said that all of these things are in demand all the time and we would have them if there were money enough to pay for them. But to produce new impulses, how would it do, through combined educational effort to induce the diversion of a few hundred million dollars now spent each year for imported cosmetics, to the further improvement of our homes? Perhaps through concerted educational effort our ethical and moral standards also could be raised to such a high level that a few more hundred million dollars now lost every year on account of crime, could be made available to improve our homes. These last remarks may seem to be aside from my subject, but I have a feeling that not only the future of agriculture but the future of every other industry is deeply concerned.

Agricultural colleges and the Federal government will go on with its research and instruction for farmers, and in the same way research and instruction will go on with the purpose of further increasing efficiency in the steel industry and in manufacturing shoes, and in every other great occupation. Otherwise other nations of the world will surpass us. To argue to discontinue the kinds of progress that have been mentioned is to appeal to ignorance, and American people will not listen to that kind of argument.

Cooperation

Probably the most important service yet rendered by the Federal Farm Board is the strengthening of cooperation among farmers. Great progress is being made under their leadership. The explanation of our backwardness in agricultural cooperation is not ignorance or indifference. American farmers did not cooperate as farmers did in other leading agricultural countries twenty-five years ago because the farmers of this country did not see any benefit in doing so. Cooperation is a great social as well as an economic movement. To be successful it must be needed and those concerned must clearly see the need. We are seeing it now better than ever before, therefore the progress that is being made.

The most widespread and complete organization of agriculture is said to be in Denmark. We are told that in that country self preservation had a most important influence in getting the farmers into a frame of mind which would enable them to cooperate and then to carry on successfully as they have been doing now for many years. In that country a member of a cooperative society is compelled loyally to live up to his agreement with his fellow farmers. If he has agreed to bring his milk to the cooperative dairy for a certain period of time he must do so or suffer a penalty. He cannot divert it without suitable warning, and in no case on short notice, to some other outlet which promises to pay a little more.

In Germany, where agriculture also is well organized, one authority says that cooperative societies "have saved the German farmers from extinction." In France the cooperative societies are given much credit for increasing the yield of wheat per acre about 50%. In that country before the war there were more than 5,000 agricultural organizations.

I have said that cooperation has not been better developed in this country because its need was not realized. As a matter of fact, the need hardly existed until a few years ago.

The grandfathers of the present generation of farmers in their boyhood days saw a very different type of agriculture than we have now. The ambition of farmers *then* was to raise crops and animals for consumption on the home farm. They were not worried about world market or market prices. They had comparatively little surplus to dispose of, and much of that was traded for supplies that they could not produce. Their taxes were low, farm labor was cheap and most of the work was done by the farmer's own family.

Things had changed when the fathers of the present generation of farmers were in their boyhood. Wisely or not, our authorities had decided to give away what seemed to be boundless acres of fertile land in the midwest and that area was developed rapidly in the years following the Civil War. The ambition of every farmer then was to produce as much as he could. Our exports of agricultural products became larger and larger. The prices at home were set in the foreign markets. If any farmer could bring a few more acres into cultivation his income would be correspondingly increased.

The world price was low, but it was enough above the visible cost of production so that the farmers of this nation seemed to get along and steadily increase their output. They did not think of the value of fertility that was removed with the crops. Some of the older folks of today who lived on farms in this area can remember how people left the east and went west to grow up with the country and they can remember how the tremendous production from the new lands of the west affected prices in the east and the long, hard struggle of many years that followed for the eastern farmers. Those were the growing pains of our nation.

Cooperation in those days would have been of little benefit and it was not attempted. There were a few agricultural societies but none of much strength.

Then things began to change and the present generation of farmers from their boyhood up have borne the brunt of the changing situation. Overhead costs increased, roads and schools and court houses and other public improvements were built, and taxes had to be raised accordingly. If crops were particularly poor in any season now the farmer could not settle back and say, "I have enough wheat and corn and hogs and poultry to feed my family and I can wait for another year." No, he has a big tax bill to pay and he has to pay for his farm labor in competition with industrial plants and railroads which have become great employers of labor. He has to buy farm machines because he can not afford to continue without them. And most of all, his standards of living have been raised. He feels he has a right to travel along with his city cousins in this respect and he is right, it costs more money.

So the farmers of the present generation, perhaps without realizing it, have become business men. They must meet their annual obligations. They must plan their work to bring in an income sufficient to pay their taxes and their labor and their other many expenses. They find that the foreign prices of farm commodities have not gone up as fast as their cost of production. No longer can they sell their surplus in foreign markets and accept the same foreign prices for everything used at home and make a showing on the right side of the ledger. This is a new problem that has come upon the present generation of farmers. It has been greatly magnified by the war and post-war conditions and further intensified by the great drouth. If prices in foreign markets had kept rising with the cost of production in this country we would be now as well off as in former years, but that did not happen. Our farmers, now selling on the basis of foreign prices must take a loss and the more they have to sell the greater their loss. There are exceptions to all rules, but speaking of agriculture as a whole conducted with reasonable efficiency, these remarks apply.

Farmers realize increasingly that they must cooperate in dealing with their new and difficult problems. They must exercise some kind of control over the quantity of production, they must act jointly in respect to surpluses, they must market their products in large quantities well assorted according to accepted grades, they must have the best of trained salesmen who can drive just as good a bargain as is done regularly by those who sell supplies to farmers.

Cooperative societies here, as in France and other European countries, even in Russia, can give great aid in holding down and further reducing costs of production. This must be done to assure a margin of profit. It must be done for the benefit of consumers generally who naturally like to pay less for their requirements, and it must be done to prevent this country from losing the race that is on with at least half a dozen other great agricultural nations.

Legislation

Another factor that will have much to do in determining the future of agriculture is legislation, including appropriations. There are some good laws for agriculture, and we are thankful for them. More legislation is needed to strengthen cooperation. The laws relating to taxes need some revision in fairness to agriculture. There is a great misconception concerning appropriations that are made in the name of agriculture. A pen like Mencken's is needed to debunk the popular idea that farmers and agriculture have been especially favored through appropriations by Congress and in the states. How much have the American people paid because of tariff laws on non-agricultural products as compared with what they have paid toward promoting agriculture and including all of the past and prospective appropriations for the Federal Farm Board? A comparison would show that the farmers have not been the favored ones.

It is reported that the Federal agricultural appropriation budget for 1932 shows a grand total of $225,000,000.00. This is charged to agriculture. The farmers of the United States are supposed to be the beneficiaries of this huge sum of the tax payers' money. But $137,000,000.00 of it is for good roads. Who uses these roads the most, the farmers or the other millions of people whose automobiles crowd the highways? $16,000,000.00 is charged to the Bureau of Animal Industry. It is well known that a major part of the work done by the Bureau is the inspection of meats in slaughter houses. This is for the benefit of the meat consumers, the great majority of whom do not live on the farm.

$16,000,000.00 more is for the Forest Service, which has its important relation to sources of water supply for cities and towns and which has important relations to climate, which concerns everybody, and important relations to the cost of building materials. The Bureau of Entomology will have nearly $3,000,000.00. But all of the harmful bugs are not on the farms. The Weather Bureau will get $4,500,000.00. The work of this Bureau is of interest to farmers, to be sure, but it is of vital concern to shipping and commerce and now to aviation, and the whole cost is charged by superficial thinkers to the farmers of the country. When these and a few other items have had their non-agricultural parts squeezed out, the $225,000,000.00 supposed to be for the benefit of agriculture shrinks to a comparatively small amount.

A certain State Department of Agriculture receives liberal appropriations and they are made in the name of agriculture and the farmers of that state are supposed to be the beneficiaries. But that Department of Agriculture enforces the food laws of the state. Its agents inspect food factories, warehouses and sales, all in the interest of the food consumers. A considerable fund in that state is used to control rabies and the difficulties and expenses of this disease are attached to canines in cities and towns perhaps even more than to those on the farms. Market supervision, milk inspection, and other activities call for funds from tax payers in the name of agriculture, but the use of these funds do not relate to people on the farms nearly to the extent that they relate to people off the farms.

It is hoped that tariff laws relating to agricultural products will become really effective as they are for many products manufactured in this country in quantity less than the country requires. Congress has generously provided tariffs on agricultural products and it looks well on paper, but when there is a large surplus of agricultural products seeking foreign outlets the benefit of tariff laws is greatly reduced and may be nothing.

The five-year average value of agricultural exports in the period ending with 1894 was 654 million dollars. Ten years later, in the period ending with 1904, it was 875 million dollars. And twenty-five years later, in the period ending with 1929, it was 1,791 million dollars.

Recently we read in the newspapers of plans to reduce the production of oil. The disastrous effects of producing oil in excess of requirements were pointed out and those most concerned, apparently with aid and comfort from Washington, took steps to bring about a reduction. It is more difficult for farmers to take such action because there are so many of them and because they can act effectively only one time a year and because there are so many factors which control the volume of production. But exactly the same result in agriculture should be had as is possible for oil or coal or any manufactured product, and necessary and proper legislation to this end would be a great benefit.

Some relief would be furnished to agriculture if Congress could be induced to postpone the further development of irrigation projects. It is a travesty for Congress to appropriate money to help control surpluses and at the same time appropriate more money to irrigate more land and thus to further increase the surpluses. The increase of irrigated land in ten years amounts to about half a million acres. Agriculture in the United States would be better off if its productive area had been decreased this amount rather than increased, and a great many innocent suffering homesteaders would be better off if their unproductive acres were taken off their hands by the government and put back into the range or the forest.

Through legislation and possibly additional appropriations there should be developed new ways of using surplus farm products. If our farmers are to amply feed our nation every year surpluses must be expected in the majority of years. Under present policies such a surplus, which is in the interest of consumers, reacts with great force against the farmers. It is found that a reasonable sized crop, enough to meet all requirements, will bring to the farmers a larger return than the crop of another year, which is ten or fifteen per cent above domestic requirements. A way should be found to care for this uncontrolled surplus production. When the nation already is well fed it is useless to say that the surplus should be consumed. We might consume more than a normal quantity of shoes or flowers or clothing if prices are slightly reduced, but when a person has paid a dollar for a good dinner he would not pay five cents for another.

There should be more non-food uses for surplus farm products. It is to be hoped that the chemists and other scientists will apply themselves to this problem. Who would have thought a few years ago that a high grade product closely resembling silk would be manufactured from wood pulp or corn stalks? If we can make from surplus wood or corn stalks an imitation of silk at such a price that all women, rich or poor, may wear stockings that appear to be silk, then, for instance, why should we not hope to make from higher grade products, perhaps surplus wheat or corn, coats that are as warm and as beautiful as those made from sealskin? Then all women could have their ankles covered with silk or something that looks as good and their shoulders covered with sealskin or something equally good in appearance.

The surplus crop of potatoes, especially on the Eastern Shore, is still fresh in our minds. The price was so low that on some farms the potatoes were not dug. The expenses of plowing, planting, fertilizing, cultivating, taxes and interest were a complete loss. Is it too much to hope that with the aid of proper legislation and financial support a way will be found to make commercial alcohol from such waste organic matter, so as to give some return to the farmers and make their loss a 40 or 50 or 60 per cent loss instead of 100%. This would fortunately not interfere seriously with any other industry. The final result would be to leave a little oil in its natural reservoirs in the earth for the benefit of coming generations.

The future of agriculture is a tremendously complicated subject. The thinking people of our nation appreciate its importance. Almost everyone wants to see farm conditions improved. Farmers have been sorely pressed and depressed. This is the time they should be planning for greater and better things in the future.

The return of prosperity to this nation may await the return of prosperity to the American farmer. They constitute the largest group of producers of new wealth in this country. But they are now holding their expense to the minimum. Because they are not buying more farm machinery and automobiles those industries are closing down. If by some action the six million farmers of this nation could receive for their products next year what they received 10 years ago, they would have 3 more billions of dollars to go into the national channels of trade. Automobile factories, farm machine makers, and the steel industry, all kinds of manufacturing, transportation, commerce and banks would feel the benefit.

And if the farmers could receive such returns for their labor a second year and a third year, the wave of prosperity would reach every part of the nation. A few billion dollars of new wealth to be expended by six million farmer buyers scattered in all parts of this country would have a wonderful effect in restoring prosperity to the nation at large.

We have seen recently about eight years of national prosperity with agriculture at low ebb. Some people had begun to think that national prosperity had nothing to do with agricultural prosperity. It now appears that we are all going to relearn the old lesson that agricultural prosperity underlies national prosperity. It now appears that we are all going to relearn the old lesson that agricultural prosperity underlies national prosperity. And in the future we may see all interests combining to cooperate with farmers in bringing about agricultural prosperity and in making it permanent so that national prosperity may return and itself be permanent.

CHAIRMAN MASSEY: You have heard this afternoon of the great quantities of feed we have been buying in this state cooperatively. We are fortunate in having with us in the audience here this afternoon the President of the Allied Mills, Mr. McMillan, and I would be pleased to introduce him to this audience. (Applause.)

Remarks

MR. MCMILLIAN: I won't do a thing but tell you one story. The story is of a boy on the street who had a dog that was doing all the tricks you could think of from standing on his head, and even trying to talk.

A man came down the street with a very fine dog on the end of a chain, with a gold cane in his hand, and he stood and looked at the dog that was doing the tricks for a long time, and at last he said to this little urchin, "Boy, let me ask you a question. I have a dog here that has a pedigree as long as your arm. He has got a gold collar and chain, and I take the best care of him in the world, and he just doesn't know those tricks at all. I have never been able to teach them to him. Now tell me, what is the answer to the story?"

The boy looked up at him and said, "Well, fella, to begin with, you have got to know more than the dog!" (Laughter.)

It might make you feel good just for a minute anyhow to let you know that in the farming communities of the middle west there are some conditions in regard to milk and poultry that are worse than they are out here. About a month ago I talked in northern New Jersey when the college had a meeting there for a week. They had the various organizations in, and I said to them that I believed I was talking to the representatives of one of the most prosperous farming communities in the world. Their milk prices were right, their egg prices were right, they had pastures this year, some had, and some had other things you didn't have here in Maryland. But at the present time no place in the world is getting as much for milk as you are getting in the State of Maryland.

Do you know this, that there are many communities in the central west who beg, who would love to have their basic price for milk the price that you are getting for your surplus? Do you want me to tell you that this is a fact, that I know of an institution, a dairy association that was told about six months ago, "Listen, you were a little unfair to us a couple of years ago, and now I am going to tell you a story. If you are getting more for your milk it is all right, but you are going to get just surplus milk for every pound you produce for your entire trade area, that price is $1.25 a hundred."

Now, it may make you feel good to know that in some conditions you are better off than some of the central western farmers who are getting fourteen to twenty cents a dozen for eggs. Kill the hens that are not laying, and kill the cows that are costing you money, because you will have enough surplus one of these days so the Lord himself couldn't keep your price of milk where it is.

I have just been impressed with the great marketing system you have here, and I am not here for any other purpose than to say to each man the same answer this little boy gave to the fellow with the dog. You have got to know more than the dog does. I am going to tell you times are hard with most everybody. But the man who can do the job better than his neighbor is the fellow who will succeed. Worry will not help him, but hard work and careful thought will do it.

In our organization we are cutting out the underbrush. We can do it at times like this. It can be found, and it can be found by you better in times like this than it can be found at any other time. We have got to think whether we want to or not, and we cannot think and worry at the same time. You and I have a job, and if we get up in the morning thinking as a philosopher we will get farther.

I said I will tell you one story, and I will, and then I will close. This fellow is quite a philosopher. He makes speeches all over the country, but he made one that always appealed to me and I tell it to my boys, and I tell it to my organizations once in a while, and I think I will tell this story to you. This old fellow said:

As I went over the country I was taken for a traveling salesman once as I got on the train. As I set my grips down a fellow came up to me and said, "Hello, Brother." I said, "Hello."

He said, "How's business?"

I said, "Rotten."

He said, "Put 'er there. I'll say it's rotten. You know times ain't like they used to be. There ain't nobody got no money, there won't nobody buy anything, and if they do buy it you can never get them to pay for it. Oh, it's terrible. Did you ever see such weather as this rain, and it is muddy? As a matter of fact, I want to tell you my machine is stuck right now out in the country two miles deep in the mud. I tried to get a team of horses to come and get me out. Look, I have got mud clear to my knees. Oh, it's awful."

He let him go on for a while and then he said: Listen, brother, I was just kidding. I know business isn't very good, but you know, I don't think about it much. I keep myself busy finding out how to make it a little better. I don't care how rotten it is. As a matter of fact, with me it is fairly good. You say it's raining outside? I didn't notice it. I walked down here with these grips. It drizzled a little, but I forgot it was raining. I got some mud on my shoes, but I don't think about that. No, I will tell you, when I woke up this morning and saw the sunshine coming through my window, and found out I was as strong and healthy as could be I said to myself, thank God for another day. As for me, Dusty Miller, this is the best day of my life.

But I will tell you another story. If I wake up again tomorrow morning, whether business is good or bad, and that same sun is shining through my window, and I am still alive and well, I will say once more, thank God for another day. As for me, this is the best day of my life.

And I say this to you, ladies and gentlemen, should I see you again as time goes on, if you and I live that kind of a life things won't be so bad. We will get some cobwebs out of our brains, and maybe we can do a better job than the other fellow. And so my only message is to you and to me, and I hope to practice it myself, let us try to do a better job than the other fellow and do the things that we know must be done to bring them about.

REPORT ON STATE APPROPRIATION

The following is a financial statement of the State appropriation made to the Maryland Agricultural Society-Maryland Farm Bureau Federation, approved by the Council and submitted by the treasurer, Dr. T. B. Symons:

Maryland Agricultural Society—Maryland Farm Bureau Federation

Financial Statement for Fiscal Year 1929-1930

Appropriation for Fiscal Year ending September 30, 1930 $5,000.00

Expenditures during 1929-1930:

Date 1929		Payee	Classification	Amount Expended
Oct.	4	Md. Farm Bureau Fed.	Office Rent (October)	$ 52.92
	30	M. D. Moore	Community Ex. (Wash. Co.)	5.00
Nov.	2	Md. Farm Bureau Fed.	Office Rent (November)	52.92
	8	P. D. Brown	Community Ex. (Charles Co.)	50.00
	8	T. D. Holder	Community Ex. (Caroline Co.)	25.00
	16	Ardath E. Martin	Community Ex. (Wash. Co.)	25.00
	19	J. P. Brown	Community Ex. (Wicomico Co.)	24.75
	19	Marian G. Swanson	Community Ex. (Wicomico Co.)	20.00
	19	R. F. McHenry	Community Ex. (Allegany Co.)	50.00
	20	J. B. Morsell	Community Ex. (Calvert Co.)	50.00
	25	John H. Carter	Community Ex. (Garrett Co.)	45.00
	30	James F. Armstrong	Community Ex. (Colored)	25.00
Dec.	4	Md. Farm Bureau Fed.	Office Rent (December)	52.92
	5	Bertha Moreland	Community Ex. (Pr. Geo. Co.)	20.00
	5	H. M. Carroll	Community Ex. (Harford Co.)	25.00
	9	Hattie E. Brooks	Community Ex. (Dorchester Co.)	25.00
	9	Irene Martin	Community Ex. (Wash. Co.)	12.50
	17	Louis H. Martin	Community Ex. (Colored)	50.00
	18	E. Thos. Massey	Travel (Chicago Nat. Conv.)	101.40
	19	James F. Armstrong	Community Ex. (Colored)	25.00
	23	Priscilla B. Pancoast	Community Ex. (Cecil Co.)	50.00
	23	J. E. Metzger	Travel (Centerville Corn Show)	24.93
	30	Ernest W. Grubb	Community Ex. (Queen Annes Co.)	50.00

Date		Payee	Classification	Amount Expended
1930				
Jan.	6	Md. Farm Bureau Fed.	Office Rent (January)	52.92
	6	Pearl E. Marlow	Community Ex. (Montgomery Co.)	20.00
	14	F. W. Geise	Travel (An. Meeting Balt.)	6.53
	14	Md. Crop Improve. Assn.	Community Ex. (Corn and Potato Show, An. Meet. Balt.)	308.52
	16	W. R. Ballard	Travel (An. Meeting Balt.)	4.42
	17	H. R. Shoemaker	Community Ex. (Frederick Co.)	50.00
	23	Paul Gerlaugh	Travel (An. Meeting Balt.)	54.62
	30	Md. Farm Bureau Fed.	Travel (R. A. Elwood, An. Meet.)	100.00
	30	Bessie M. Spafford	Community Ex. (Caroline Co.)	10.00
Feb.	3	Lewis M. Lambert	Supplies (Signs, An. Meet. Balt.)	34.70
	3	Henry C. Whiteford	Travel (Meetings, Balt.)	14.69
	10	J. N. Gourley	Travel (An. Meeting Balt.)	60.48
	10	A. J. Heinicke	Travel (An. Meeting Balt.)	37.44
	11	United Reporting Ser.	Printing (Reporting An. Meet.)	252.47
	12	Oliver I. Snapp	Travel (An. Meeting Balt.)	88.26
	21	M. D. Moore	Community Ex. (Wash. Co.)	5.00
Mar.	3	Md. Farm Bureau Fed.	Office Rent (February)	52.92
	7	Md. Farm Bureau Fed.	Office Rent (March)	52.92
	13	Advertisers' Eng. Co.	Printing (4 Halftones)	13.50
	24	M. D. Moore	Community Ex. (Wash. Co.)	12.50
Apr.	3	Md. Farm Bureau Fed.	Office Rent (April)	52.92
	3	Frank E. Gardner	Community Ex. (Balt.)	6.03
	12	A. F. Vierheller	Community Ex. (Balt.)	3.00
	12	S. B. Shaw	Community Ex. (Balt.)	1.45
	16	I. N. Nester & Co.	Supplies (Balt. Ex.)	7.00
	16	Daniel Miller Co.	Supplies (Balt. Ex.)	17.15
	17	Ernest N. Cory	Travel (Balt. Ex.)	33.78
	16	W. T. Henerey	Travel (Balt. Ex.)	4.05
	16	A. F. Vierheller	Travel (Balt. Ex.)	13.43
	18	George S. Langford	Travel (Balt. Ex.)	4.95
	18	S. B. Shaw	Travel (Balt. Ex.)	22.04
	19	C. Graham	Travel (Balt. Ex.)	6.60

May	3	Md. Farm Bureau Fed.	Office Rent (May)	52.92	
	16	Florists Club of Balt.	Community Ex. (Balt.)	156.00	
	17	Henry C. Whiteford	Travel (Meeting, Balt.)	7.72	
June	5	Md. Farm Bureau Fed.	Office Rent (June)	52.92	
	25	T. B. Symons	Travel (Balt. & Wash.)	10.59	
July	24	Md. Farm Bureau Fed.	Office Rent (July)	52.92	
Aug.	4	Mrs. M. T. B. Johnson	Postage	77.50	
	23	Md. Farm Bureau Fed.	Office Rent (August)	52.92	
	30	M. M. Stewart	Travel (Marshall, Texas)	50.00	
	30	Md. Farm Bureau Fed.	Postage	72.50	
	30	Md. Farm Bureau Fed.	Office Rent (Pt. Payment)	4.96	
	30	M. M. Stewart	Other Exp. (Labor, An. Rpt., etc.)	75.00	
	30	T. B. Symons	Other Exp. (Labor, An. Rpt., etc.)	60.00	
	30	K. G. Connolly	Other Exp. (Labor, Accounts, etc.)	50.00	
	30	A. H. Snyder	Other Exp. (Labor, An. Rpt., etc.)	15.00	
	30	Elsie Geis	Other Exp. (Labor, Clerical, etc.)	10.00	
	30	Univ. of Md. Press	Printing (Grange Programs)	16.00	
Sept.	11	Md. Farm Bureau Fed.	Office Rent (September)	52.92	
	11	F. W. Oldenburg	Travel (Timonium Ex.)	115.90	
	15	Md. Farm Bureau Fed.	Office Supplies	50.00	
	15	Md. Farm Bureau Fed.	Printing (Letterheads, etc.)	120.25	
	15	Dorothy Emerson	Community Ex. (Girls)	100.00	
	19	Whitaker Paper Co.	Supplies (Paper)	24.26	
	19	Univ. of Md. Supply Store	Office Supplies	.89	
		Total Expenditures to Oct. 1, 1930, Paid by Treasurer			$3,547.80
		Paid Direct by Comptroller's Office for Unexempted Expenditures:			
		Twentieth Century Printing Co. (Programs, Annual Meeting)		$ 131.36	
		Torsch & Franz Badge Co. (Buttons, Annual Meeting)		66.00	
		Twentieth Century Printing Co. (An. Reports—Bound and Separates)		1,254.84	
		Total Paid Direct by Comptroller's Office			$1,452.20
		Grand Total, Expenditures Oct. 1, 1929, to Oct. 1, 1930			$5,000.00

CHAIRMAN MASSEY: The meeting is adjourned.

The meeting adjourned at five-fifteen o'clock.

ADJOURNMENT

THURSDAY AFTERNOON

January 8, 1931

The Second Session convened at two twenty-five o'clock, President Davis presiding.

PRESIDENT DAVIS: The meeting will come to order.

Mr. Blackwell will make a few remarks at this time.

REMARKS

By J. D. BLACKWELL

Baltimore, Md.

Members of the Farm Bureau, it is my good pleasure at this time to present the winners in the state-wide vocational boys project contests. I say contests, because this year the contest has grown to the extent that we have instead of a few contests as last year, at the present time twelve different contests, and you will see what those contests represent as we go along.

I want, however, briefly to outline to you and with you some of the machinery back of selecting these boys. These boys before you represent the 1,200 boys enrolled for instruction in vocational agriculture in the forty-seven high schools of Maryland. We have at the present time agricultural departments in approximately 33 per cent of all the first group high schools in the state. This represents a tremendous growth even in this period of somewhat discouragement. We had more new departments of vocational agriculture last year than any year since 1923, bringing the total this year up to 47 as I have said.

These boys not only represent the boys enrolled for vocational agriculture in Maryland, they represent the 40,000 boys enrolled in the F. F. A., Future Farmers of America, throughout the forty-four states of the Union. Two years ago in October, 1928, there was organized in Kansas City, Missouri, at the time of the National Live Stock Show what was known as the F. F. A., Future Farmers of America. Of course, this movement did not start in Kansas City. We have to look to our neighbor state, Virginia, for some of the good things. Most of you know in Virginia they had a long, long time ago three letters, F. F. V. This means first family of Virginia. But the people of Virginia perhaps got tired of using F. F. V., meaning first family of Virginia, and so they modernized the term, and two years ago they changed it to mean Future Farmers of Virginia. The title was so catchy that a number of the states in the Union took up the idea and organized future farmer associations, and then, of course, following the state associations the national association was organized as I say, two years ago, with just a few states belonging. Maryland has the distinction of being the ninth state to have a charter of the F. F. A.

So I say these boys before you this afternoon represent not only the 1,200 boys enrolled for vocational agriculture in the 47 high schools of Maryland, they also represent the 40,000 boys enrolled in the F. F. A. throughout the forty-four states.

It is interesting to note that in the selection of these boys, and of course, these 35 boys here merely represent all the boys enrolled not only in the agricultural work, but also in the project work, I say it is interesting to see before you the winners, 35 winners. It is interesting to note how well they are distributed throughout the state. They represent twelve different counties of Maryland. They represent sixteen of the high schools, I mean directly, that is, these boys come from sixteen different high schools, and I think it is a fine tribute to the type of boy we are getting when we know that some of these boys came from the distant counties in the state. A number of the boys are from Garrett County, one boy is from Somerset County, and some others from the Eastern Shore counties. So I say they do represent not only the agricultural boys, but they represent your boys, the future farmers of Maryland.

Now, of course, with 1,200 boys there has to be some means of eliminating, and so we took all the boys who were enrolled for project work in this project contest, and through a score card method, and by the score card method I mean we had a definite method of scoring these boys so that we selected the winners. They were not only scored from the standpoint of project income, but they were also scored from the standpoint of their notebooks. I was very much interested in the remarks this morning relative to keeping accounts on the farm. We hope and we feel that we are doing something to train the young farmer, the future farmers of Maryland, if you please, to keep very accurate accounts on their farms which they will occupy in the future.

Not only have these boys been checked up from the standpoint of their bookkeeping, their records, but they have been visited a number of times by their respective teachers. Each boy here has also been visited by the state supervisor of agricultural education, so we have several checks on these boys, and we feel sure in presenting these 35 boys this afternoon that we are presenting the 35 boys who had the very best projects in the state during the year 1929 and 1930.

The committee in charge of the selecting of the winners in this contest consists of Donald Watkins, Chairman; Charles Remsburg, of Frederick; Harold Remsburg, of Smithburg—don't get excited because there are two of them, because we have so many Remsburgs teaching agriculture in Maryland that it is a little bit difficult to make up a committee that doesn't have a number of them on it.

These medals that are to be presented this afternoon are F. F. A. medals, and I want to go into some detail to tell you just what F. F. A. stands for, Future Farmers of America.

I think you will be interested in knowing something of what the Future Farmers of America stand for, something as to their aims and ideals, and with your permission I would like to list those. I might say that these ideals and aims of F. F. A. are very much the same as our ideals for agricultural instruction in the high schools in this and other states of the Union. First of all, to promote vocational education in agriculture in the public schools. Secondly, to create more interest in the intelligent choice of farming occupations. I think some times some of us have entered the farming occupation not always from choice and not always after having given it a detailed thought. So it is worth while from the standpoint of our training if we can get these boys, give these boys intelligent choice of farming occupation.

Third, to create the love for country life; fourth, to encourage recreational and educational activity; fifth, to promote thrift, and that, of course, is a very difficult aim to accomplish in these times; sixth, to encourage cooperative effort among students of vocational agriculture. We feel that if we are ever to accomplish anything cooperatively in agriculture, or perhaps I should say if we are to accomplish the greatest amount cooperatively in agriculture, we must start with our young farmers, and thus our efforts along that line.

Seventh, to strengthen the confidence of the farm boy in himself and his work. Eighth to promote scholarship among students of vocational agriculture. I might say that before a boy can be selected for the third degree in F. F. A., which is the Maryland degree in this case, he must have made an average of B in all of his high school subjects. Sometimes we get the impression that only the boys who cannot take anything else take agriculture. We are attempting to overcome that feeling by saying that a boy who makes a third degree, the Maryland Farmer Degree, must have made an average of B in all high school subjects, including agriculture.

Ninth, to develop rural leadership. Those are the aims of the F. F. A. Those are also the aims of our department and these county boards of education in attempting to develop vocational agriculture throughout Maryland.

I think I wouldn't be fair if I didn't take just a moment at this time to express our appreciation, the appreciation of the school authorities throughout the state and the appreciation of the agricultural teachers throughout the state, to express our appreciation to the following organizations which have made this contest possible. First of all, the Interstate Milk Producers' Association; second, the Maryland Crop Improvement Association, the Maryland Dairymen's Association, the Maryland Farm Bureau, and may I say at this time that really, we couldn't have accomplished very much along this line without the support of the officers of the Maryland Farm Bureau, and we are doubly appreciative of their efforts. Also, the Maryland Farm Bureau Federation Wool Pool, the Maryland Tobacco Growers' Association, the Tri-State Tobacco Association, and the Maryland Agricultural Teachers' Association, because under the auspices of the Maryland Agricultural Teachers' Association we have been enabled to check up carefully and to stimulate enthusiasm in these boys to present the best type of project.

Again I want to thank you one and all for the wonderful way in which you are stimulating the vocational agricultural education program throughout the State of Maryland. (Applause.)

SECRETARY STEWART: Mr. Blackwell I know in trying to get his speech through on time inadvertently overlooked mentioning the Maryland-Virginia Association, which is also one of the donors of the medals for the boys in that milk shed.

I am going to call the names of the winners, and as I do so I will also try to call the name of the representative from the association donating the medals to come forward and present those medals to the boys.

Presentation of medals to boys. (Applause.)

LIST OF WINNERS IN THE STATE-WIDE VOCATIONAL BOYS' PROJECT CONTESTS FOR 1929-1930

(Awards made at State Farm Bureau Meeting at Lord Baltimore Hotel, on January 8, 1930.)

Project	Rank	Contestant	High School	Award
Calf (Balto. Milk Shed)	First	Robert Anderson	Jarrettsville	Gold F. F. A. Medal
	Second	Earl Long	Thurmont	Silver F. F. A. Medal
	Third	Albert Zentz	Thurmont	Bronze F. F. A. Medal
DONOR—Maryland State Dairymen's Association.				
Calf (Wash. Milk Shed)	First	Franklin Smith	Frederick	Gold F. F. A. Medal
	Second	John Burdette	Damascus	Silver F. F. A. Medal
	Third	Harold Young	Damascus	Bronze F. F. A. Medal
DONOR—Maryland-Virginia Milk Producers' Association.				
Calf (Phila. Milk Shed)	First	Henry Butler	Centreville	Gold F. F. A. Medal
	Second	Herbert Willey	Princess Anne	Silver F. F. A. Medal
	Third	(To be submitted later)		Bronze F. F. A. Medal
DONOR—Interstate Milk Producers' Association.				
Baby Beef	First	Austin Fraley	Thurmont	Gold F. F. A. Medal
	Second	David Bachtell	Smithsburg	Silver F. F. A. Medal
	Third	Donald Hawkins	Gaithersburg	Bronze F. F. A. Medal
DONOR—The Maryland Farm Bureau Federation.				
Swine	First	Willard Hall	Frederick	Gold F. F. A. Medal
	Second	Jerry King	Damascus	Silver F. F. A. Medal
	Third	Ellsworth King	Damascus	Bronze F. F. A. Medal
DONOR—The Maryland Farm Bureau Federation.				
Potatoes	First	David Williams	Smithsburg	Gold F. F. A. Medal
	Second	Allen Kelley	Oakland	Silver F. F. A. Medal
	Third	Willard Hauser	Oakland	Bronze F. F. A. Medal
DONOR—The Maryland Farm Bureau Federation.				

Project	Rank	Contestant	High School	Award	
Sheep	First	Wayne Fitzwater	Oakland	Gold	F. F. A. Medal
	Second	Wayne Hamilton	Oakland	Silver	F. F. A. Medal
	Third	David Williams	Smithsburg	Bronze	F. F. A. Medal
DONOR—The Maryland Farm Bureau Wool Pool.					
Poultry	First	Chester Reedy	Jarrettsville	Gold	F. F. A. Medal
	Second	Vincent Tabler	Gaithersburg	Silver	F. F. A. Medal
	Third	Chester Stone	Frederick	Bronze	F. F. A. Medal
DONOR—The Maryland Farm Bureau Federation.					
Field Corn	First	Martz Zimmerman	West Friendship	Gold	F. F. A. Medal
	Second	Clarence Hulshart	Jarrettsville	Silver	F. F. A. Medal
	Third	Harry Dove	Lisbon	Bronze	F. F. A. Medal
DONOR—Maryland Crop Improvement Association.					
Sweet Corn	First	Clark Linthicum	Clarksville	Gold	F. F. A. Medal
	Second	Albert Phelps	Clarksville	Silver	F. F. A. Medal
	Third	Meredith Poole	Frederick	Bronze	F. F. A. Medal
DONOR—Tri-State Packers' Association.					
Tomatoes	First	William Gordy	Hurlock	Gold	F. F. A. Medal
	Second	Randall Stack	Hurlock	Silver	F. F. A. Medal
	Third	David Eutsler	Millersville	Bronze	F. F. A. Medal
DONOR—Tri-State Packers' Association.					
Tobacco	First	Plater Berry	Baden	Gold	F. F. A. Medal
	Second	Russell Pierpont	Clarksville	Silver	F. F. A. Medal
	Third	Bennie Huntington	Hughesville	Bronze	F. F. A. Medal
DONOR—Maryland Tobacco Growers' Association.					

Committee—Donald Watkins, Chairman, Mt. Airy, Maryland; Charles Remsberg, Frederick, Maryland; Harold A. Remsberg, Smithsburg, Maryland; J. T. Blackwell, Secretary, State Department of Education, Baltimore, Maryland.

PRESIDENT DAVIS: It has been our custom to ask certain members of our Board of Directors to preside at the various sessions of this convention, and it gives me great pleasure at this time to introduce to you one of our County Presidents who has been on our Board for many years whom we hold in the highest esteem and who has a real active County Farm Bureau, and that is Mr. Carroll Lowe, of Talbot County, who will be your presiding officer this morning.

Mr. Lowe assumed the Chair.

CHAIRMAN LOWE: Mr. President, Ladies and Gentlemen, Fellow Members of the Farm Bureau: I think this is the most unfair situation I have ever experienced. I was busy back there getting my delegation together in order to take this banner home. I know I can't sing; they said, though, that they wanted me there to help swell the crowd. Mr. Stewart said he thought it would help more if I came up here!

We are a little pressed for time, so I am going to call for the Chairman of the Credentials Committee to make his report at this time.

Mr. Nuttle made the report of the Credentials Committee.

REPORT OF CREDENTIALS COMMITTEE

Your Credentials Committee has examined the records submitted by the Secretary-Treasurer of the Maryland Agricultural Society-The Maryland Farm Bureau Federation and find the following county and affiliated organizations in good standing and recommend in addition to their duly authorized director the seating of delegates as follows:

FOR THE COUNTY FARM BUREAUS

County	Number Members Paid	Director	Delegates	Total
Anne Arundel	58	1	1	2
Baltimore	230	1	5	6
Cecil	68	1	1	2
Carroll	130	1	3	4
Caroline	157	1	3	4
Dorchester	66	1	1	2
Frederick	406	1	8	9
Harford	315	1	6	7
Howard	261	1	5	6
Kent	215	1	4	5
Montgomery	162	1	3	4
Queen Anne	153	1	3	4
Talbot	164	1	3	4
Washington	123	1	2	3
Wicomico	95	1	2	3
Worcester	124	1	2	3
Total	2727	16	52	68

FOR THE AFFILIATED ORGANIZATIONS

	Director	Delegates	Total
Md. Stockmen's Association	1	1	2
Md. Beekeepers' Association	1	1	2
Md. Crop Improvement Assn.	1	1	2
Md. Vegetable Growers' Assn.	1	1	2
Md. Poultry Assn.	1	1	2
Md. Tobacco Growers' Assn.	1	3	4
Md. State Dairymen's Assn.	1	3	4
Agricultural Corp. of Md.	1	3	4
Md. State Horticultural Society	1	1	2
Total	9	15	24

This will make the Convention consist of 68 delegates from the Counties and 24 from the Federated organizations, or a total of 92 delegates, entitled to vote. In addition to this, the Chairman of the Home and Community Committee of the State Farm Bureau Federation is entitled to vote.

Respectfully submitted,

H. H. NUTTLE, *Chairman*
CHARLES T. COCKEY, JR.
C. ASHBY DUVALL
R. NEWELL STAGG, JR.
WILBERT L. SMITH.

CHAIRMAN LOWE: You have heard the report of the Credentials Committee. What shall we do with it?

MR. DAMON: I move the report be accepted.

The motion was duly seconded and carried unanimously.

CHAIRMAN LOWE: We are coming on this program now to a very serious talk. After this little interlude I am sure you will be ready to listen. Mr. C. R. White, President of the New York Farm Bureau, is going to talk on a subject that is certainly most important to all of our farmers at this time, "How New York Solved the Tax Question for the Farmer." Mr. White. (Applause.)

ADDRESS

BY C. R. WHITE

New York

Mr. Chairman, Fellow Farm Bureau and Home Bureau Workers, Ladies and Gentlemen: I am very pleased indeed to be here today as one of the representatives of the American Farm Bureau Federation. You, I think, are favored in that respect, having a Director as your President, having the Vice-President and the President of the Alabama Farm Bureau here yesterday, and Mrs. Sewell here today from the American Farm Bureau, and then I come as a Director again. So the American Farm Bureau is pretty well represented at your meeting.

I want to make just a few remarks in regard to the young men that I saw here this morning. I am going to do that because a few hours ago I was in conference over in Washington with Secretary Hyde and some of the members of Congress and other American Farm Bureau representatives in regard to extension funds. Mr. Stone, of the Farm Board, was there, and he spoke of the necessity of training our boys and girls not only in the questions of production, but also that they as the coming generation who will take over the business operations of the farm, should be schooled in that line of work also, and he proposed that we should give to those boys and girls medals or prizes for the best essays on cooperative marketing.

It struck a very fine chord indeed, the idea of having them come along with an understanding of how to dispose to the best possible advantage of their products when they have grown them. It was brought out that today throughout the United States the work of the Farm Board is very badly handicapped, because the people generally do not understand the operations of the Farm Board and the methods that are essential if their work is to be successful in this country. They don't understand what the Farm Board is fundamentally for. In a good many sections they seem to have an idea that it is simply to come and hand out some money to them as a relief proposition.

But that is not what it is for. It is to build up a farmers' marketing program in the United States so that the farmers will have control of their products and the marketing of those products the same as the industries have. That requires a great deal of study and a great deal of thought, and during that time we must train men in methods of marketing so they can do this work. The greatest difficulty that we have ever had in the United States in cooperative effort has been the lack of people who understood the business of handling the products. We necessarily must take those people from our own ranks, because when we go into the ranks of the middlemen who understand the technique of handling farm products, those men are not in sympathy with us. The best of them are getting good incomes in their own business, and it is practically impossible to get them to take over the work of selling farm products for cooperative organizations, and if they do, you don't always know whether they are going to stick to the non-profit proposition and hand over the profits of the farmer or whether they have got so imbedded in their understanding the idea of taking profits out of the farmer that they are unable to get away from it.

Now these boys that we have here today, we all know as older people that in a very, very short time they will be taking over the helm and guiding not only the farm operations of this country, but they will also be taking over the things that we are doing in our collective interests, and it is imperative that we do everything we can to train the boys and girls of this country on the farms so that as they come on they are going to perhaps do much better than we have been doing.

Taking up the question of taxation, it has two separate phases. The first phase of taxation is the actual tax you pay in dollars. The second phase of it is what those dollars cost you. As a matter of fact, we producers of farm products only use the dollar as a go-between. We actually pay our taxes in the commodities. We buy dollars to pay taxes, and if dollars are high in value, which to use other language means products low in price, why, our taxes are increased proportionately. And that is one of the difficulties we are contending with in the United States today in our farm taxes. It isn't entirely due to the increased number of dollars that we have to get, but also due to the fact that it takes vastly more of our products to get the dollar.

The matter that is of very great importance to us as much as the payment of actual taxes is the question of the stability of that measuring stick we call the dollar, and that is now and is going to be one of the foremost problems of the people of the United States within the next few years. We can go back to the time of Adam Smith 150 years ago, and we find there in his writing that same problem of dollars was up. We find there in the history of commerce that when in the United States back in '48 and '50 we had the tremendous gold output, the pound sterling went down, and down, and down in value to a point where it was very embarrassing to the creditor class of England. As a matter of fact, it made it so bad that the people who were relying upon incomes from investments had hard work to live.

Then we have a number of periods in the history of this country and of other countries where on the other hand the increase in the value of the dollar or the pound sterling, whatever the unit is in the different countries, has so increased in its purchasing power, has so made it almost impossible for those who had interest to meet, taxes, interest and principal on mortgages, bonded debts, etc., to meet their obligations.

That is what we were going through just forty years ago. The older men here will remember, I think, very distinctly the panic of '92. I do, because I was hit pretty hard by it, and at that time we had a Democratic President and a low tariff. Grover Cleveland was President, and we had a tariff for revenue. Today we have a Republican President, Herbert Hoover, and a high tariff, and the same identical economic conditions prevail.

It isn't political and it isn't tariff, but it is an economic question which involves the standard of measure by which we measure all values. We go down in the Bureau of Standards in the Department of Commerce, and we will find there a bar which is put in a vapor proof, moisture proof vault which is kept at an even temperature. It is made of an alloy so it is the least possible affected by temperature, and on it there are two hair lines that are just three feet apart, and they in themselves are a thousandth of an inch wide. If you should go over there and want to look at those they would let you look through one of two telescopes that looks into this little room, because they wouldn't want you near enough to it so your body warmth would affect the length of it. The experts over there are not satisfied with those lines being a thousandth of an inch wide, but they want to reduce that down and make it a finer measure so it won't be over a millionth of an inch out of the way.

That is the way we are measuring volume, and dimensions, and weight, that is by just such carefully drawn standards. And yet, my friends, in this country and the world over we take one commodity arbitrarily in the gold countries and in the silver countries we take another, silver, and we say that a certain arbitrary amount of that should constitute the unit. In this country 25.8 grains gold is a dollar, commodity gold, and we assume, and that is probably the best qualified of any metal for that purpose. But commodity gold has the same relation, the same habit of fluctuating as compared with other commodities when it is plentiful or scarce, just the same as wheat, and corn, and you know what happened to wheat and corn, the great shortage of corn and the great over supply of wheat so that today wheat isn't worth as much as corn, and we have just that fluctuating quality as between gold and other commodities, and gold has been growing scarce for a number of years.

The same identical thing happened forty years ago. The result is falling prices in all commodities that are measured by that gold standard.

Now, here is a very strange thing in money that I think will interest you. You could take ten old worn out silver dollars if you could see that they were silver dollars, it could be seen at the Washington Treasury, and they would exchange those for a brand new ten dollar gold piece for you, ten of those old silver dollars. They would exchange any kind of money you have, bank notes, treasury notes, Federal Reserve notes, anything you have, and give you gold, a hundred cents on the dollar, or 25.8 grains of gold for each dollar. But if you should go there with some gold coin which had suffered abrasion and wear, they would put it on the scales and weigh it, and they would give you just what it was worth at 25.8 grains.

Every international transaction is based on gold, not by what is stamped on it, but what it weighs as a commodity just as balances might be settled by corn, wheat, hogs or anything else.

Now, we have got to get at the problem to stabilize that measure so that an obligation that is entered into at one time will be paid in a dollar that will buy just as much at a future time as it did at the time the obligation was made.

It is one of the burning questions. There is an organization known as the Stable Money Association, and some of the most prominent men in the world are members, bankers, economists, business men, for the purpose of studying out methods to bring that about, and we expect it won't be long before action will be taken along that line in Washington. There are already several bills before Congress.

Just compare the measuring yard that I described to you a minute ago to the old original yard which came from the word girth. At one time the yard measure was the girth around the chief or head of the tribe or nation. How would you like to contract to deliver a hundred thousand yards of cloth around the girth of Woodrow Wilson and measured around the girth of William Howard Taft? That is exactly what you are doing at the present time with the products that you are delivering on the American dollar. Your American dollar has become more and more costly, because the material which it represents is more, and more, and more costly.

You see, in buying those dollars that affects your taxes. You might not have any increase in taxes at all, but if your farm products fell off half in value, it would double your taxes, wouldn't it? If labor is scaled down half in price and the laboring man has a mortgage on his home, you have just doubled his debt. It will take just twice as many days to meet that debt. It will take just twice as many days of work to meet the taxes upon that place, so you see those two questions are very closely related.

What has been the effect of that situation within the United States within the last ten years? It is a very strange thing indeed that a few years ago we here in the east were hearing of the trials and tribulations of the people of the middle west out where Mrs. Sewell came from in the State of Indiana, where they were asking all sorts of relief that seemed to some of us eastern people extravagant, unreasonable, undesirable. We didn't realize all of us in the east exactly what that situation was. We didn't realize what there was working under this decline in values that has come on and on east.

Well, I want to say to you that forty years ago, or forty-two years ago that same kind of thing appeared in this country. If you will get the chart which shows the deflation starting back about '85, you can go back after the Civil War in fact, and you will find several periods—I haven't time to go into it, but you will find back away from our eastern centers where that depression first started, and you will find they suffered exactly in those sections as they are today, because in every instance of these major depressions you will find that it strikes the farm produce in the remote sections first. It next affects farm values in those sections. It then comes on and affects your transportation companies, it affects your industry, and affecting the industry hits the stock markets and they go to pieces just the same as they did in this last occasion over in New York a little over a year ago, except that in this instance there was a high speculative element in the stock market in addition to that which would have been the natural decline.

Then it strikes our populace in the eastern sections, and in every instance our metropolitan districts have been promoted in their expansion by the low prices in farm products in the few years preceding it, because the lowering of the cost of living has made it more possible for people to own homes, and consequently, the building boom was carried through just as it has been in the last three or four years in our great metropolitan districts in the east.

As a matter of fact, if you will get the National City Bank's, Mr. Robert's monthly news letter, you will find that New York people think this depression started only after 1929. Mrs. Sewell, they had no depression in Indiana according to the people on the other side of the Hudson River in the state in which I live. Some of you people thought they had. But it struck them then. They had this tremendous boom. Now that is striking New York and it is striking our great metropolitan district, and the slump in values is very great. If something doesn't happen to stop this slide, and it is pretty nearly like stopping an avalanche, they are going to decline very considerable more.

Those people who were not interested in the relief of the midwest people a few years ago are going to be as great sufferers ultimately if something extraordinary doesn't happen, because if you will go back forty years ago or just thirty-eight years ago, you will find conditions so much worse than they are today that they are not imaginable to the present generations. Business absolutely died out. Then what happened? We changed Presidents. McKinley was elected President, we enacted high protective tariffs, just what we have got today, but what did happen, my friends, in 1896 was some of the greatest gold findings in the world were made in Alaska and in South Africa, and gold came in such abundance that the creditor class of the country were scared for fear the dollar would go to such a low point it would be equal to that dishonest dollar they had.

Now, these are things that are worth thinking about, because we of the present generation ought to help to do everything in our power to see that this thing doesn't occur again if there is any possible solution for it.

I just want to say that my purpose in going to Washington today was together with Chester Gray and Mr. O'Neal to meet President Hoover, to talk with him about this proposition, having a commission to try and bring some action up to Congress within the next year or two to see if we can't stabilize it. England and France and the other nations are just as anxious as we are, but it is an unthinkable situation. I just want to read to you from a letter if you will pardon me, two or three figures. This letter says that Senator Borah is reported as having said, "The loss to the American farming community due to the fall in prices in May, 1920"—see they say 1920, they don't say the date that Mr. Roberts mentioned over there,—"was Twenty Billion Dollars. Research shows in the United States within a five-year period, the unstable dollar robbed some and enriched others to the extent of Forty Billion Dollars. Professors Warren and Pearson of Cornell University have stated that more than one million farmers lost their farms as the result of the depression which began in 1920."

We can't figure what those things mean. Just stop and think what it means to the family. Think of the elderly people who can't recuperate, have no opportunity in life of coming back where their farms are wiped out by this depression, this depletion in price. Just think of the suffering and think of the people who have families that they want to educate, and the hopes of giving them the education they desired is also eliminated.

Dr. Fisher of Yale University, one of the greatest economists in the world, makes the statement that the fluctuation in the dollar of our money standard has caused more wars, more suffering than all other causes combined. The great English economist, Josiah Stamp, closely associated with the Bank of England, corroborates that statement, and says it is the most important question before the people of the world today. Owen D. Young—I could mention a lot of prominent men in this country—takes the same position.

Now we come down to the question of taxes. What are we going to do to lighten this tax burden? In the first place, we have three essentials in taxation. One is that taxes should be collected as easily and as cheaply as possible. That is to say, it wouldn't be good economy for us to have expense so great in the collection of taxes that a large proportion of it would be absorbed in the administration of the law.

In the second place, we must collect the taxes from those who are most able to pay. It is a foregone conclusion that you can't collect taxes from a man who hasn't anything to pay taxes with. If he has real estate he will default, and you can take his real estate, and probably you don't want it when you get it.

Then we should collect taxes from those as far as possible who derive the greatest degree of benefit from the expenditures of money so collected. We have our gasoline tax which is now being used in every state in the Union which has those three outstanding qualifications. The gasoline tax is easily collected, because we collect it from the distributor at a very small cost. It certainly must come from those who are able to pay it, because they are able to run automobiles and trucks, etc., and certainly, we collect it from those who use the roads in proportion to the amount of use they make of our streets and roads. So there is no tax we have in the United States today that meets the three fundamental requisites of taxation as nearly as does the gasoline tax.

Now, when we had in our early days the ownership of real estate or of property, real estate and what was then tangible personal property like the animals and the implements, etc., it was representative of the wealth of the people and of their ability to pay to a very large extent. Upon that we based our tax system in the United States. I want to say right at this point that we are the only nation on the face of the earth that has adhered to the old idea of taxing real estate and personal property on a basis of its value. In other countries they tax real estate on a basis of its true rental value or income value rather than upon a so-called sales value.

We could go into many states of the Union today, and if we should try to collect taxes from real estate on the basis of its sales value, why, you wouldn't find any willing buyer, and I don't know what basis you would tax it on because already hundreds of thousands of pieces of real estate today, if put on the market, would not find a buyer at any price. Nobody would want it. It isn't indicative in any degree of the ability of the taxpayer to pay, but it exacts from you as a property owner the measure of income from the state and the subdivisions of your state just exactly the same, no matter if weather conditions have been such that there was no income derived at all, as it would if you had weather conditions so that you had bumper crops. Your ability is wiped out, and therefore, the tax under such conditions is taking your capital instead of taking income. It doesn't represent your ability to pay.

What has taken place in this country during the last seventy-five years? Our business is so changed through the incorporation of business and the building up of the great transit companies, the great banking institutions, the great industrial institutions and all those which are, whose value is way in excess of its real estate and is represented by stocks and bonded indebtedness. The income from that is way in excess of the income from real estate.

I haven't the figures for your state, but it isn't far from my state. Your agricultural lands in Maryland are not as large in proportion to your urban population as ours is. You are in a better shape so far as taxes are concerned except perhaps we have, because of New York City, greater resources from that great wealth there than you have in Maryland. But the real estate of the State of New York represents not to exceed 25 per cent of the total wealth of the state, and it is paying at the present time 70 per cent of the taxes which are raised within the state, that is, 25 per cent of the wealth is paying 70 per cent of the taxes.

Real estate in itself, together with the income of the owner operators of such real estate, the income in New York State is 31 and a fraction per cent of the total income of the state. Salaries, wages, interest, dividends, fees, etc., represent 68 per cent. And yet, that 68 per cent is only paying 25 per cent of the taxes of the State of New York. You see, it is hardly fair. That is why we need to change our whole system.

I have here a bulletin which was put out recently that shows to some extent how far-reaching that thing is. I find here on a chart starting in 1914 at 100, farm prices went to 320 in 1918 and 1919 and dropped back in 1921 way below the hundred mark, then raised a little and stood at 80 as compared with other prices. Taxes starting at the same point have continued to go up since 1917, and now stand at 270 of the value.

In other words, we have gone down 20 per cent, and we have gone up 170 per cent in the taxes. That shows why it is hard for farmers to pay taxes.

Now, in New York State we are not collecting any tax from real estate or property for state purposes. We have 21 different sources of income in the state. We believe in the income tax. We believe in it because your income tax at worse as imposed in the United States is only a nominal tax.

Just a few days ago I was reading an article about the development of the great Krupp works over in Germany, that it has been converted from that great gun factory into one of the finest industrial institutions in the world. It went on to tell what the developments were, and then stated that the best workmen in that institution got from $12.00 to $15.00 a week and paid 10 per cent in income tax and 3 per cent in unemployment tax. In this country any amount in tax that we exact from people is on incomes that are a good deal higher. As a matter of fact, in New York a man who has an income of $2,500 is exempt from paying any tax on his income, and then we ask him to pay only one per cent on that from there on up to $10,000. Now, just think what we are asking from a single man with a $5,000.00 income. We are asking him to pay $25.00 taxes toward the support of government. A married man has $4,000 of income that is exempt, so that a married man with $10,000 of income would only pay $60.00. And yet, under that tax we collected last year $86,000,000, and they certainly were able to pay.

Just compare that with what you are paying at your lower rate, that you are paying on real estate in the State of Maryland with your net income. You are not getting away with any such taxes on your net income, I don't believe. Just figure it out for yourself. Why, Ed. O'Neal told me today it took all of his net income to pay his taxes, it just went out on his real estate. The worst feature of that is that we have brought up in this country a large proportion of our population who are not attached to real estate in any way whatever, and we have brought about a condition where ownership of real estate in the country as a whole is not at all desirable. We are not only making it undesirable for our farmers to own farms, and thereby our farm population in the last ten years has shrunk almost five million people, approximately what our unemployment is in the United States today.

It is just the same with home owners. Where five years ago in our metropolitan districts we had people desiring homes and buying homes, today those homes are being given up on the mortgages because of the slump and the high taxes, and people are becoming renters. Over in New York City, according to Governor Smith, I heard him make this statement at a dinner three years ago in Syracuse, 90 per cent of all the people living in that city are living in rented apartments and didn't think they paid any taxes. Now, my friends, if they didn't pay any taxes, then the owners of those apartments lost money. If the owner of the apartment can't charge the taxes on as part of the overhead expense, he must be losing money.

If you or I in our farm operations, or if an industrial institution in paying taxes cannot charge that on so it goes down the line to the consumer, he is taking out of his capital and his principal and he is on the road to bankruptcy. Just let's keep that in mind, that a tax which isn't paid by the consumer is leading the interests which pay those taxes to bankruptcy.

Over in the State of New York we have a tax commission of which I am a member which was put into operation by the last Legislature representing the tax paying interests. We only have two members of the Legislature on that commission, one from each of the two houses, and they are the chairmen of the tax committees of those, of both houses of the Legislature, and the more we study taxes and find how we are going to pay according to means, we have come to the conclusion that the consumer tax—I don't want to say that, because our commission has not decided, but some of us have come to the conclusion that the consumer tax, right along the lines of the gas tax is the most equitable that will compel all the people to help bear the burden of government and that will be cheap to collect.

We have a great number of exemptions in real estate and in other incomes in the United States, and those people are getting away without paying taxes, although they enjoy the same privileges as the rest of us, and this way they can't get away from it, because they have just got to pay if they buy.

Well, now, what happened in New York? We had a hearing in New York City. We were met with open minds by the merchants of New York City, but very, very cold hearts, and they told us how impossible it would be for them to pay a sales or consumer tax. They first said that they couldn't charge it on, that it would be impossible. When we showed them how simple it might be done, then they started lamenting for the poor consumer, said it was going to be a terrible thing for the consumer.

What about taxes so far as the consumer is concerned anyway? If you could wipe every cent of real estate tax off the map, if you could wipe all the taxes off that are on industrial institutions and we could pay all of our taxes in two ways as a consumer tax where the money is absorbed in living, and in income tax on the higher incomes so as to get those who didn't absorb their income in living, we would pretty nearly catch all the people, and on an equitable basis, a basis of ability to pay.

Let's see what you do as a consumer as it is. Take the suits of clothes you have got on and just trace the taxes that are in them. From the time the wool left Montana, it went into the warehouse and there were taxes. It went over the railroads from there to Boston or Baltimore or New York, the three great woolen centers, and in every one of those railroads, if you should go over to Washington and take the interstate commerce commission diagrams, you would show or be shown the percentage of tax that entered into every traffic rate of every car in computing them. That is added to the cost of the wool as it arrives in one of these centers and goes into a warehouse where there is a real estate tax, and if it is a corporation certain franchise taxes. Then it goes out of there over a transportation line again which carries taxes to the textile mill where it is made into cloth, and there again it carries a tax on the real estate and a tax, if it is a corporation which it is in most instances, the franchise or income taxes of those corporations.

Then it goes from there to the clothing institutions carrying another tax on transportation and the tax on the real estate and franchise taxes on the clothing institution. Then it goes through the same process again as it goes through a retail clothing store if it takes the shortest possible course.

Now, those taxes are part of the overhead or expense in making the product in each stage, and the profit is charged on that cost, so when you pay the taxes on that suit of clothes down at your retailers you are not only paying the exact accumulation of taxes all down the line, but you are paying a pyramid of taxes on top of those profits at each stage. Which place would it be best to pay it, down where you just paid the tax once to your retailer like you do a gasoline tax, or pay all that pyramided profit on it? The consumer is going to pay it anyway, and he is paying about fifty per cent more in having to pay it this way on everything he buys as a consumer than he would if he paid it in a direct consumer tax.

What are we going to do with this money when we get it into our State Treasury? We have our localities which have to be relieved. In the State of New York our Constitution provides that the obligation to educate the child rests upon the state. We guarantee the child, no matter where it is, if it is back in the hill country, a good education, a good school. Today a one-room district school in our state is guaranteed $1,500.00. The district raises a four mill tax or $4.00 on a thousand, and the state will make good the balance, and in some of those districts in our poorer sections in the hill districts in New York, that means about $1,300.00 the state pays. As a matter of fact, we are paying today for school assistance over $100,000,000 in the state. It goes through all different kinds of schools right down to the city schools, giving the child an opportunity.

What is the fundamental reason for that? Lots of the states are not doing that at all. They are leaving the obligation of educating the child to the locality. Assuming that the child is a citizen of the locality. Well, the parents are citizens, and temporarily the child will be. But when some of the states like yours, I believe Mrs. Sewell, are sending about 45,000 boys and girls from your rural districts into the cities, it is obvious those children are becoming citizens of other sections, your metropolitan districts, and it is the obligation of the state to see that they are educated for the state and nation instead of being educated for the locality in which they reside as was the case 100 years ago when we adopted that kind of ideal.

The highway system is identically the same. We call for a farm to market road. Well, there are two ends to it. There is one out where your farm is in the country, and there is one here in Baltimore, and it is just as essential to Baltimore people that that road be built so you can come in here with your products and you can come in here to do business as it is for you out there in the country. It is part of it. And so the obligation rests upon your state to see that roads are built.

We passed a law last winter, even going so far as to give material assistance in maintaining dirt roads, the last one of our road systems to be taken care of. If the town raises $3.00 on a thousand, the state will make good on that up to $100.00 per mile. In the gas tax eighty per cent goes to the counties on the basis of the road mileage outside of the state system, and the rest goes to incorporated villages and cities, and on a basis of mileage of roads. That is what we build on, is road mileage. Some of our big centers thought it ought to go there on either the car population or the assessed valuation, and they would have gotten the lion's share of it, of course, but they didn't get that.

Now, we have the franchise tax on corporations, and I want to say to you people here in Maryland you have got it on us a little bit. We have a 4½ per cent net income tax or franchise tax on our business corporations, and you people have about 2. As a matter of fact, you have gotten one big institution away from us in New York just because of the difference in the taxes here. Here on a hundred dollars' production it is 47 cents, and in New York $1.63.

We have got to change that. We can't stand that, because we can't afford to lose our industries.

When you get into this tax question, it strikes at the very vitals of American life. The best people that we have in America today are the people who own their homes, own their farms, and own their business. It is all right to talk about industrializing agriculture. It is all right maybe from an economic standpoint that there may be ways we can centralize this industry and put our people into homes like they are doing over in Russia where they are centralizing, and I presume it is an improvement over the Russian conditions as they have existed. But I want to say to you, and I think you will agree with me, that you don't want out in your section fifty years from now your sons and your daughters living in the same kind of homes that you see here around the industrial centers of Baltimore. You want them out there as home owners, with a pride in their homes and pride in their farms. My friends, when we have that, America will be safe.

Now, these questions are of burning importance. I don't believe the rank and file of our people know it. I know here today that I am talking to the most intelligent people from the farm section of the State of Maryland. I am talking to a people who don't need it anywhere near as much as lots of other people do from other sections. But when I look over this country and think what a baby country we are, only about 300 years of age, just think of it—we were over at Boston helping celebrate the 300th Anniversary of the settlers coming in there in New England. I came up through this territory last winter, I was down here at Jamestown, Williamsburg, Virginia, and I saw where those people came in and settled where they had that tremendous loss of life, and I have been all up along the coast where our first settlers came and studied it and thought it over. Just think what they went through! Just think of how terrible the suffering was, the privations, and all that they went through to hew out this nation which is so young, this great republic, these great lands, this great wealth that was handed as a heritage over to us the present generation that is richer than any heritage handed to any people on the face of the earth.

I want to say to you, my friends, that if we go on as careless as we are because of our wealth, we will not hand over any such heritage to our children and the children yet unborn. It is our obligation to this country—we talk about loyalty and patriotism, but my friends, we must stop making that show of loyalty and patriotism in words and celebrations, etc., but put it into actions that are necessary to preserve the heritage that was handed to us.

I thank you! (Applause.)

CHAIRMAN LOWE: Several days ago I was listening in on the National Farm and Home Hour broadcast by the Department of Agriculture in connection with several associations, and it was a program sponsored by the American Farm Bureau Federation. On that program they called on Mrs. C. W. Sewell for a speech, and I think it was one of the finest things I ever listened to. I am sure that all of us who have heard Mrs. Sewell will agree that we are especially favored this afternoon in having her with us. She is going to speak this afternoon on "When Dreams Come True." Mrs. Sewell, Director of the Home and Community Department of the American Farm Bureau Federation. (Applause.)

ADDRESS

MRS. C. W. SEWELL

Chicago, Illinois

Mr. Chairman and Friends: As I understand it, this microphone is rather out of fix, and I believe if you will bear with me for a little while and I stand right here where I can look you right in the eye you can hear me, and if you can, I would be ever so much obliged.

I think it is a very fine thing for a woman to follow this scholarly presentation of matters of finance that have been so ably presented by Mr. White. Kin Hubbard, of Indiana, who left us a few days ago, remarked near the close of his wonderful life, that what this country really needs is a seven cent nickel. I believe that after you have heard Mr. White this afternoon and you have coupled it up with your own experience as farm men and women paying your taxes annually and semi-annually, that you will agree that that solution to the financial problem would be a very good one.

Another reason that it would be a fine idea to have a woman coming after this presentation is the fact that it is said that women spend about 85 per cent of the income that is earned and expended in this country.

I am going to venture this afternoon to talk to you along a little different line from the ones which I usually pursue. I have gotten rather tired of talking about just the same things, and so I am going to let my fancy have its way, and I am going to talk about some things that might happen if my dreams would all come true.

From the days of time immemorial dreams and prophecies have been rather connected together. They have been connected somewhat with the supernatural. You will recall that Joseph, the dreamer, alternately was praised by Pharoah and bitterly hated by his brethren because of the dreams that he had, while Daniel struck fear to the court of Nebuchadnezzar by his clever interpretation of the handwriting on the wall.

I am told that when Elias Howe was trying to perfect his invention of the sewing machine, that the people who were backing his efforts finally were becoming very much disgusted because of his continued failure to perfect the machine. The great trouble that he was encountering was where to put the eye in the needle, because up to that time nobody thought that you could have the eye of the needle at any place except the head or the opposite end from the point of the needle.

Finally, when he was almost distracted by his worries and his continued labor he fell into a troubled sleep, and he dreamed that savages were brandishing spears all about him, and that they had pointed ends very much like the point of the needle which he was trying to perfect, and that they had holes in the end. So he went forthwith to work and put the eye at the point of the needle instead of in the head.

So we find dreams having their important places in the life of a people or peoples, and this afternoon I want to give you some of these dreams. If I had told you ten years ago when I spoke before the first American Farm Bureau Federation meeting in Indiana, in my own state, that we would be having such meetings all over the United States as the one in which you are seated this afternoon, and which is duplicated in every one of the states that we have a Farm Bureau functioning in, you would have told me that I was rather fanciful. If I had told you that over the air would be going the programs of the American Farm Bureau Federation and of our State Federations day after day throughout the year without a cent of cost to the organizations, welcoming our talks and our ideas and our songs, you would have thought that that was rather far fetched.

If I had told you of the great corporations and allied institutions in a business that would be set up by our state Farm Bureau Federations, you would have thought that was rather the dream of a radical and somewhat unpractical woman. I might duplicate it by any number of different ideas of things which have come to pass in the short experience of our great organization.

The Home and Community Department of the American Farm Bureau was builded on dreams, and I think that too, your grand old man of Maryland, Mr. Cohill, who was a member of the Board of Directors of the American Farm Bureau and the Chairman of the committee which helped to introduce that resolution, that to him is due a great deal of credit for anything which we may have accomplished.

A little while ago in company with other members of the American Farm Bureau staff, I spent a very delightful week at Biloxi, Mississippi, and while we were there we were entertained at one of the new developments called Gulf Hills, a very beautiful resort, and we were shown a wishing well; a very clever arrangement of mirrors in the bottom of this well made it possible, if you got a proper and correct angle, to see your own reflection. If you were able to do that, your dreams would come true. And so while I gazed into that wishing well I made all sorts of wishes for the future of American farm homes and the Home and Community department of our state and national organizations.

I think sometimes we have confounded and confused the real aim and importance of this highly important department. Some of us have thought that it was a sort of feathers-and-mollasses proceeding for the woman member. I don't like that idea a bit more than the boys did during the war. I shall never forget a man who was doing a great deal of work with the Boys Working Reserve, who said to a group of people who were engaged in war work, "Don't tell the boys that you are trying to get interested that they can come on and do this boy's job. They want to do a man's job."

The women of the Farm Bureau don't want to take the place of the men, but they do want to be regarded as fellow citizens, as having average intelligence, as having the same identical interest in the business and the legislative and the economic interests of the farmer as a farmer himself may have.

At that particular time we found that it was necessary to do some of these things that the women were interested in. And so we began to plan a program which, as yet, has not been fully realized, and I believe we have not begun to scratch the surface of the great possibilities.

I like to think in my dreams of propositions and projects which will be attempted by State and National Farm Bureaus in which men and women together will work for the accomplishment of these things which will make homes and communities much happier and pleasanter places in which to live.

Last summer, in June I believe, Chicago entertained a wonderful convention, a convention of an organization only twenty-five years old, which sent delegates in the number of 20,000 from 67 nations. There was not a commercial report made in that entire meeting. There was not a dividend reported as having been paid. No prices had been lowered, no taxes had been saved. And yet, that group of people had a purely altruistic program which had attracted the attention of people around the globe. That was the convention of International Rotary.

It made me think that perhaps the department of which I have the very high honor to be the Director at this time, has immense possibilities that we might uncover in the day after tomorrow.

Now, these are some of my dreams. I have always felt that it was too bad that fathers and mothers of farm homes must wait until the children had grown up and fled away, left the home nest, before they were able to build the new home, and that so often has happened, while in every city of any considerable size we have our building and loan associations that have made it possible for the working man of other interests and professions to build his home, live in it while he paid for it, and enjoy it.

I believe that a Home and Community program in the future in the Farm Bureaus may well attempt something of this new method of housing and building farm homes.

As I have gone about from one side of the country to the other, it has always irked me to see the extremely low value which has been placed for so long a time on woman power. Everything else has been reduced to the place where it is motorized and electrified and all that sort of thing, and only in just a few instances have we had rural electrification made possible. If you lived where I do, you would know that when we have only one farm home to the mile, or in many instances even still less than that, the extension of rural electric lines for the most part has been prohibitive. Then, after we got the lines constructed in many instances, the rate was prohibitive. Hence, we have not had as much of a development of rural electrification as we ought to have enjoyed.

I have always been interested in the story that is told of the little boy who was asked in his history examination to tell how and when and where slavery originated in the United States, and he wrote like this: "At first there were very few women came into the colonies, and the planters were very lonesome. Finally a man went over to England and got a whole shipload of girls to come over to this country. They were very glad to come to Virginia. The planters were very glad to make them their wives. And so slavery was introduced into the United States!" (Laughter.)

This sleeping giant of rural electrification may relieve a great deal of the slavery of the farmer's wife, for in spite of progress and advancement and carefully laid plans, there is still a great deal of hard work to do in the average farm home that you can't possibly do on paper with a pencil.

I have been very much interested, particularly in my own state, that is the one I know the most about, in the developments which have been made in our collective purchasing, in our insurance, in all of those things which we regard as highly commercial. Last year the Indiana Farm Bureau, with its allied institutions, did a business amounting to a little more than a million dollars a week. And yet, I believe they have only started. I think they have only gathered up a few shells along the seashore, because in my dream I see great stores, department stores, chain stores, if you want to call them that, which will provide not only feed and fertilizers and coal and twine and salt, but they may give us all the things that we need to furnish our homes and to construct and conduct our business.

I am told that in spite of the cleverly worded advertisements of the American Laundry Association, something like 90 per cent of the farmers' wives still do all their own laundry. I can see cooperative laundries here and there that will do something towards taking at least two days of hard work a week out of the busy farm home.

When I go about I see that there are a great many farm homes and farm buildings that need paint, but I know from our own sad experience that the price that we receive for the wheat crop this year isn't in accord with the price that we would have to pay for white lead and linseed oil. I have had a dream which has come true already, for President White has told me that the G. L. F. is manufacturing paint and producing and selling the paint spray machines to County Farm Bureaus making it possible to do the work in a very acceptable way at a very low rate of cost.

While our husbands and fathers and sons are busy planting tobacco, and wheat, and milking and all of these things, there is one other thing which the women have been supposed to be possibly interested in all the years. There is a sort of fallacy that the poultry produce, the money received for it, is the pin money of the farmer's wife. Bless your heart, it has been used to pay the interest on the mortgage and these awful taxes and a lot of other things for a good many years! But I have been told recently by a man who is in the employ of the Federal Farm Board, that there are on every car of poultry marketed in New York City obsolete charges of $207.00. Two of these charges have to do with the unloading, which is no longer done, and draying that goes along with this same charge that isn't being done at all, and the third I have forgotten.

But back in the farm homes and the individual communities of our counties that amount of money is being taken from the busy woman who decides a little bit later than this that she ought to set the incubator. So she plods along for three weeks to get those chickens properly hatched. And how many times does she go out in the night time to see that they have been properly cared for and that no two or four legged robber carries them off during the night? It is such a long, long trail between the platter of fried chicken that people who come out from the city tell us it is "so easy" for you to have, and that day when we set the incubator. So that I think an attempt to market poultry is going to find a very responsive echo in the hearts of farm women, and will find a large part in the program of home and community departments in years to come.

I remember on the occasion of my first visit to Maryland how very much interested I was in the possibilities of your state for young men, the beginner like my own son or my young son-in-law. And then when I went down into Alabama with Mr. O'Neal he was telling me about a particular section of country where if a young man had a little capital he might do very well. But he added this note of caution, that he must know how to operate that land, he must not put all of his available capital into the purchase of land, which is much cheaper than in the sections where you have your homes. And so I thought back to the days when the Friends or the Quakers maintained in every congregation a financial committee, an advisory committee to advise with the young farmer as to how he was going to operate during the year, and I thought that the Farm Bureaus might well afford in the near future such a committee to advise with the young farmers who might come in to their sections.

Everybody knows that this question of schools, on which Mr. White has touched just a little as regards taxation, is very dear to the hearts of the fathers and mothers of this country. And yet, the White House Conference on Child Health and Protection revealed the fact that there are still 161,000 one-room schools and 22,000 two-room schools throughout the length and breadth of the land. Have you ever noticed, as you drive through the country from one side to the other, that you will come upon a little sign which says, "School, Go Slow." That sign doesn't need to be there in a lot of instances—the schools certainly go slow! (Laughter.) They are not very well prepared to do anything else.

Yet, in our attempts to help and better our schools a few years ago we started out on some sort of premise like this. We said that we will have everything in the country schools that they have in the city schools—without any regard as to whether or not that was the thing we ought to have had. We said that we would have a nine-months school term. And do you know the reason they have the nine-months term in the cities? Because they haven't anything else in the world to do with the children. Some times I wonder if we have been on exactly the right track. We said we would educate them for the farm. And as Mr. White has told you, in my own state 45,000 of our boys and girls each year are going into other pursuits. So I ask you who, in all fairness, ought to pay the bill, and what shall we do in building this school of the future?

A little more than a year ago the great Catholic Church in one of its public utterances nationally speaking, and the Methodist Episcopal Church in another similar publication, took cognizance of the plight of the American farmer and urged the week day activities of their ministry to do what they might towards helping to organize the American farmer into conditions in which it would make it possible for him to better market his products and to collectively purchase the supplies that he needed. Very splendid statements came from both these churches, one the Catholic, the other a great Protestant organization. After I had read that and studied it over, it seemed to me that if these churches, indicative of the mood of people at the head of great organizations like that, were willing to go along with the Farm Bureau, that it would be very fine for the Farm Bureau to go along with the church.

And so I like to think that that picture which is given to us by George Elliot in "Adam Bede" in which she describes the country church in words something like this—she says, "The women usually entered the church at once, and they talked to each other over the backs of their tall pews about their illnesses, and the total failure of doctors' relief, recommending dandelion tea as being highly preferable. They talked about the bad price which the grocer was paying them for butter. They talked about the servant girls, their growing exorbitances to wages, whereas the quality of their service declined steadily from year to year. Meanwhile, the men saw no reason to enter the church until service began. So they just stayed outside and talked a little about business." Very much like church today, it matters not in what part of the country we may lead our steps.

Then she describes the closing of that church service, and she tells how the sunshine streamed in through the arched windows on the bowed heads of the congregation, how the fathers gathered up the hymn books and the mothers tied on the bonnets of the sleepy little maidens who had slept throughout the service. And then came the final words of blessing, "And now may the peace of God which passeth all understanding rest and abide with you, now and forever," falls like a benediction on the heads of that congregation. Then they all streamed out through the arched doorway into the green church yard and began their simple civilities and their simple invitations to tea.

Such a picture, to my mind, should never be lost from the life of rural America. Perhaps one of the things which President Hoover is doing or attempting to do today that will be likely to be remembered the longest in the record and histories of his administration for years to come, is his effort to better the childhood of America. And while we are discussing taxation, I should like to leave with you a few thoughts, and believe me, in my own state and in our own experience I know what you are talking about when you talk about taxation. Twenty-five years ago when Mr. Sewell and I purchased a little piece of land which is our home on the eighty acres which we had there, first we paid a tax of fifty dollars, and last year the same piece of land cost us $320.00 in the shape of taxes. I felt completely disgusted when I found we had to pay taxes even on the windmill. And so it goes. We have our problems just as possibly you have them in this great State of Maryland.

And yet, we are told—I hope that you will look it up for yourselves, I do not know that this is true, I am only passing it on to you for what it is worth, but this is the statement which comes to me and to you I believe as a challenge—that, in spite of all this great talk about taxation, crime is costing every man, woman, and child in the United States today a per capita of $85.00, and $20.00 a year is required to maintain a probation officer per child in my own state. It costs our state something like $200.00 per year to maintain a criminal in our state reformatory. The prosecuting attorney of Marion County, wherein is located the City of Indianapolis, speaking before the State Parents' and Teachers' Association recently, remarked that a very low percentage of the boys who were found in the state reformatory had ever had any religious training. A still smaller percentage of them had ever finished or attended high school, while a smaller group yet had had any training in doing anything that was useful.

So it seems to me that hand in hand with the study of taxation might go some of these problems which we call community problems.

Now, you are wondering just how we are going to do all of these things. You say that Mr. White talked about reduction of taxation and less money spending, and the women are wanting to spend more. Well, there are a number of ways in which it may be done. I will grant you that during the last ten years the American farmer has been somewhat puzzled as to what course to take, and he finds himself somewhat in the position of the traveler in the hills of Kentucky, who, finding that he was somewhat off his track, the beaten way he had intended to travel, stopped a native and asked him if he would tell him the best way he could pursue to reach the City of Cincinnati. The man stopped his whittling for the time being and said, "Well, stranger, I reckon as how I'd go down to the next cross road and turn to the right."

The man began to make preparation to go on with his car when the native stopped him with uplifted hand and said, "Naw, stranger, I reckon as how maybe you better turn to the left."

By this time the man wondered if he knew anything about it, and his countenance registered his disgust. Then the Kentucky man said, "Friend, you have asked me a question, and as man to man I am going to tell you, if I was going to go to the City of Cincinnati, I wouldn't start from here!" (Laughter.)

And so we have to back up and change gears and do a lot of things that we thought were right the first time, and of course, we have had to change in a great majority of instances. But, friends, I believe we have a number of ways in which we may do this piece of work which must be done if America is to come into its own. As these young men, these boys, so full of youth and promise, were on the platform here this afternoon, it seemed to me I had never seen a more impressive sight. I thought of that great football coach of my own state, Knute Rockne. He doesn't wait until the senior year for a boy who graduates from Notre Dame to build up his football team. Oh, no, he has had as many as 1,100 boys in football uniforms in the course of a year's time. Nor does he stop there, but for the past several years he has been sending one or two of his cleverest coaches into the junior high schools of the City of South Bend, where the seventh and eighth grade boys, if you please, are taught the rudiments of football. They are being taught teamwork and group consciousness and all of that sort of thing, following a leader, and so he has been able to build his well nigh invincible team.

When I was a school girl, I am not going to tell you when I was, I belonged for a time to a famous baseball team. I was a member of Maggie Kelly's team. You may guess Maggie's nationality. Maggie had two brothers who were members of professional baseball teams, and she knew exactly how it ought to be done. So she organized her team with a great deal of acumen. I shall never forget how she stood there and held up her bat, and she called, "Thrun up the ball, kid," and then she would give it a knock which would make Babe Ruth envious with the home runs she used to make.

I don't think as a kid or a mature woman there was ever anything I wanted to do as much as to do that, but something had been lacking in my upbringing or training or something. I was too fat to run very fast, and I couldn't bat the ball. But Maggie always had me on her team. Maggie was a true diplomat and a born organizer, and she knew that under my black curly head were the dates in history she was going to need on the next examination, and I always played on her team! (Laughter.) I was always a fielder.

I say to you, friends, that the business of the organization of the rural communities is very much like unto Maggie Kelly's team. There are those who cannot and who can knock home runs, there are those who can do this, that, and the other thing just a bit better than some of the rest, but there are always those who are needed as President Thompson says, for followship as well as leadership. And so we need to follow that kind of team. We do need to bring these boys and girls into the realization and sense of our problem.

But, friends, don't leave it all to the boys and girls. I visited one of the great states of this country, one of the states of the southwest that does not have a Farm Bureau organization. They were pinning their faith for the solving of all agricultural problems on the boys' and girls' club work, of which they did have a very creditable showing. But I said to that group of men and women that I thought they were cowards, and I do believe they were, because they were leaving things which were rightfully their job to these youngsters to solve, and they have got all they can handle when they come along in their own day and generation.

A traveler saw a man sitting on a mill dam with a shotgun in his hand. Occasionally the man fired that gun into the air. The traveler was very much interested, and so he said to him, "What are you doing here?"

He said, "I am killing the rats that are undermining the dam."

The traveler watched him for more than thirty minutes, and he saw the rats poking their heads out here and there, and never a shot fired at them, but always in the air. The traveler finally became impatient of what this was all about, so he said, "Why don't you shoot some of them?"

The man said, "Do you think I want to lose my job?" (Laughter.)

There are lots of rats.

Now, I have to do a great deal of traveling on sleeping cars, and some times I have been dined at a banquet and have eaten just a little bit more than was good for me, and I find when I get on the sleeper that I can't get sleep to come. The other night I had that kind of an experience. I took the train at a point where everybody but me seemed to have gone to bed, and everybody else seemed to be sleeping. There were pronounced snores above, below, and all around, and for a while I thought to myself, "I am a very tired woman. I am going to exercise my prerogative and be very nervous and think this thing is all wrong, and I am tired of it all anyway."

And then the thought struck me, "If you would just cooperate and do the same thing, get into the game, it won't bother you one bit." And so that is exactly what I proceeded to do. It is a thing that we will all have to take a part in, all have to throw ourselves into the breach. And so we need to meet all of these problems that you have been discussing today and will further discuss tomorrow, a strong organization of men and women working together. We need to be able to do as that great American, Theodore Roosevelt, advised us, to fear God but to be able to take our own part. And it will take the men and women together to make my dreams come true, but I believe that we are going to be able to do it.

We stand on the threshold of the new year. Yonder in our Boston meeting, when the wonderfully fine conference of American farm women was being held, and the talks that were given there by women representing states from one side of the country to the other, there was not a single utterance that gave way to let any one think that the women of the American farms were not going to stand right back of their husbands and fathers and sons and pursue the battle in which we are engaged to a successful close. It is a little strange to many of us for the American farm woman to take this kind of place. But in the words of the poet, new occasions teach new duties.

> "New occasions teach new duties,
> Time makes ancient good uncouth;
> They must upward still and onward
> Who would keep abreast of truth.
> Lo, before us gleam her campfires,
> We ourselves must pilgrims be,
> Launch our Mayflowers and steer boldly
> Out across the stormy, wintry, sea.
> Nor attempt the future's portals
> With the past's blood rusted key."

I thank you! (Applause.)

CHAIRMAN LOWE: Mrs. Sewell spoke about a wishing well, and I am sure if you had a wish to make it would be to hear her again, and I am glad to announce that she is going to be with us tonight.

That concludes the program for the afternoon. The meeting is adjourned.

. . . The meeting adjourned at four-fifty o'clock . . .

ADJOURNMENT.

THURSDAY EVENING

January 8, 1931

The Annual Banquet convened at six-thirty o'clock. At eight o'clock President Davis introduced Hon. Thomas Parran as Toastmaster. More than five hundred men and women assembled for the event, which is evidence that this social feature of the annual Farm Bureau meetings still maintains its popularity with not the slightest indication of any waning of interest.

Toastmaster Parran started the ball rolling with his usual tribute to the ladies, their beauty, grace, etc., all of which ingratiated him into their favor for the remainder of the evening.

The first speaker was Mrs. Charles W. Sewell, of Indiana, director of the Home and Community Department of the American Farm Bureau Federation. She lauded the organization and declared that the Farm Bureau is now ready to go forward with every promise of success. Mrs. Sewell asserted that a full measure of harmony and achievement is bound to accrue if the leadership of President Sam Thompson is closely followed. She praised the organization in Maryland and predicted for it a bright and prosperous future under the leadership of President Davis.

Douglas Malloch, the next speaker, proved one of the rapid-fire type and kept up a fusillade of puns and wisecracks which greatly pleased his hearers. He has been termed the "Poet of the Woods" and fully lived up to that title. His address bristled with pithy epigrams, witty stories and genuine humor, and was mixed with good, sound sense, with here and there a touch of pathos. He managed to inject a beautiful and inspirational optimism that was superbly expressed by some of his poems, recited to excellent effect.

Following the address by Mr. Malloch, a handsome silver platter was presented M. Melvin Stewart and Mrs. Stewart on behalf of the Maryland Farm Bureau, as a token of the love and esteem in which they are both held by the State organization. The presentation was made by E. Thoma

Massey and sincere appreciation was expressed by Mr. Stewart.

A song contest, in which there was much interest, was between choruses representing Talbot county of the Eastern Shore and Baltimore county of the Western Shore, with County Agents Brown of Talbot and Derrick of Baltimore county as their respective leaders. Those seated at the speakers' table served as judge and jury. Each team sang one verse and the chorus of the new Farm Bureau song, "The American Farm Bureau Spirit," and the Talbot county singers were declared winners.

Several impromtu talks were made by Farm Bureau leaders and others, including James W. Davis, president of the Maryland Farm Bureau Federation; Dr. Raymond A. Pearson, president of the University of Maryland; Dr. Thomas B. Symons, director of the University of Maryland Extension Service; I. W. Heaps of the State Dairymen's Association and George I. Gardiner of the Tobacco Growers' Association.

Frank M. Payne, the new secretary and treasurer, was called upon and thanked the banqueters for their hearty welcome, at the same time pledging his very best efforts toward advancing the Farm Bureau in Maryland.

FRIDAY MORNING

January 9, 1931

The Third Session convened at ten-thirty o'clock, President Davis presiding.

PRESIDENT DAVIS: The meeting will come to order. It gives me great pleasure at this time to introduce to you the daddy of the Farm Bureau in Maryland, Mr. E. P. Cohill, who will preside over this morning's session. You know we wouldn't have a complete Farm Bureau convention in Maryland if Mr. Cohill didn't have a part in it, because he has been on the job longer than any of us, and I think he knows a little more about it than most of us, too. So Mr. Cohill is your presiding officer this morning.

REMARKS

BY E. P. COHILL

Hancock, Md.

Mr. Chairman, Mr. Davis and Fellow Farmers: This is about the thirty-first year, I guess, that I have been coming to Baltimore to farm meetings. Our first meeting was down here on Pratt Street in the old Maltby House. I worked around here five years with Mr. Stewart; he is a worker, and he wants to make the Farm Bureau go, you know, and he has a good partner. Mr. Stewart will hammer at it, and Mr. Davis will smooth it down! (Laughter.)

Last night I was thinking when Mr. Stewart and I first started out here in Baltimore County. We went just as far as we could get in Baltimore County the first trip. It was a very dismal, foggy, drizzly kind of night, just a little cold. We got out to the meeting which was called for seven-thirty. We didn't know anything about Mr. Cockey then. There wasn't a soul around the school house. I think some of them were hiding around behind the trees to see who was going to come. We went in. There was no fire, nothing but one of these kerosene lamps. We lit the lamp, and finally some fellows came straggling in. I said to Mr. Stewart, "At the next meeting we had better let it be known that we are not going to solicit any membership and they will come." After that when they knew they were not going to be solicited, they came to the meetings. But we had that experience night after night.

Then we went up into Frederick County. They said they were perfectly satisfied with what they had. The County Agent up there told me, "Mr. Cohill, we are pretty well organized here in Frederick County, and I don't believe we are going to be able to put it over." That was the best help he could have given, because I was just determined then we were going to put it over. That fellow couldn't have done anything better to help.

I was to go out the next morning on the trolley eight or ten miles from Frederick. A farmer was to meet me, one of the most prominent farmers, at the trolley station. I went up and shook hands with him and said, "You are going to drive me around today?"

He said, "Yes."

I said, "Let's sign up."

"No, I don't want to sign up. This is a new thing, and you are coming too suddenly on me. I want to see what this thing is going to come to. I want to see what the others are going to do."

I said, "The others won't do anything, I can tell you that right now. If you go along with me and you are not signed up, where am I going to be? I am going to walk." So I started out afoot.

On the way out, I had plenty of time for reflection. I thought I would change my tactics a little bit. So I picked out a nice big house, a nice looking farm, and I thought that that fellow must be all right, so I went in and made myself known, and he said, "Yes, I have heard of this Farm Bureau. You have it up there in Washington County."

I said, "Yes, we have got a pretty good Farm Bureau working up there." I told him about the farmer I couldn't deal with and I said, "Will you drive me around today?"

He said yes, he would do that. I said, "Will you sign up?"

No, he wouldn't sign up. I said, "I will tell you what I will do. You sign this paper, and if we don't get ten other farmers today I will tear yours up."

He did, and that is the way we started out in Frederick County. We did get ten farmers and so I kept his paper. We would pass a good looking house and farm and stop, and then go right by the next one. I said, "How is it you didn't stop at these other places?"

He said, "I think we will get ten anyway." When I got back to Frederick that night I saw that all the checks were made on one bank. I knew there were three or four good banks in Frederick. He was to meet me the next morning, and I was praying all the time going out on the trolley car that he would be late so I could dodge him, and sure enough, he was. I saw him coming down the road. I went the other way, and went afoot. I went to one of the houses we didn't go to the day before and got that man started. When I got back that night I had checks on one of the other banks. So you see, there were factions we had to deal with. We found we had bank factions, we had church factions, political faction, and all kinds of factions. I thought last night when we had them all in here in one happy body what a good work we have been doing.

I thank you for listening to me. This wasn't on the program. (Applause.)

The first thing on the program is "Greetings from the Extension Service and a Report on Drought Relief to Date," by Dr. Thomas B. Symons, Director of the University of Maryland Extension Service, and Secretary of the Maryland Drought Relief Committee. Dr. Symons. (Applause.)

ADDRESS

BY T. B. SYMONS

College Park, Md.

Mr. Chairman, Ladies and Gentlemen: After having such a magnificent group of meetings, perhaps the greatest convention that we have held from the standpoint of interest, sincerity, and a feeling of hopefulness in the light of present conditions facing agriculture, I hardly know what would be the most interesting features to present to you all this morning.

I would like to take the time to refute some of the statements that our good Toastmaster said last night. He got dollars and kisses mixed up in a rather difficult way. I think we can, however, admit and say as Mark Twain said when he first saw the Atlantic Ocean. As he looked out at that broad expanse he said, "Well, she's a success!"

And I wish I might refer to the story of the gentleman who was up in New Brunswick attending a conference, and he didn't know whether it was a formal or informal occasion; it was a grouping of all the forces of the great State of New Jersey in celebration of their fiftieth anniversary, and he said he was reminded of a story they tell in Scotland. You know they have a peculiar way of conducting funerals in Scotland.

When they proceed to the funeral with the deceased they always stop at the neighbors as they go down the road. At this particular funeral the leader kept stopping with his associates at different homes and having the national drink of Scotland. The hospitality of the home was always extended to the folks who stopped in. At the twenty-fourth stop the leader had reached a point where he was ready to propose a toast, and he said, "Ladies and gentlemen, I want to propose a toast to the bride."

One of them said, "Man, this is a funeral."

"Well," he said, "whether it is a wedding or a funeral, it is a success!" (Laughter.)

I have many things to discuss with you this morning, many things I hope of a constructive nature. I am not going to be able to take the time to discuss them as I hope we may be able to later on. It is needless to say that I bring you the greetings of the Extension Service. President Pearson has done that for the University of Maryland as a whole.

It has done me lots of good to see the county agents and home demonstration agents here at this meeting. It is a grand thing to see the youth come forward, and I was glad to see the men leading those singers last night. I think it is unnecessary for me to say that we have a loyal group of men and women who are trying to do their best in serving the farmers and farm women of the state, and it is a great gratification, one of the satisfactions of life, to have leaders such as Mr. Davis and all the other county men and associates in the state and county officers to give the county agent his opportunity. Friends, I think it is a duty and a responsibility that we owe to farm folks to aid in organization as well as production and marketing problems, and I hope that with the advent of 1931, with the challenge of this new year, we may be able to promote this organization so that at least perhaps fifty per cent of the farming population of the state may realize the fruits of organization, may realize the fruits of working together with us all in promoting a constructive program for Maryland.

You have all experienced a difficult year, the most difficult year that the State of Maryland has experienced in the life of any man in this audience. I have been asked to present briefly the developments of the drought situation to date.

First I want to present a chart that President Pearson and others of the Institution presented to a group of sixty-five leading business men and bankers in this city. I felt that it was essential to show these banking and business men something which they could see, so we put the thing into dollars so they could see the dollar loss, and we presented this chart. It not only presents the loss from the drought, but it also will present the value of the respective crops.

Here are some of our main crops. You will notice we start out with corn and that ordinarily the production of corn includes both the red and green lines. So that that first bar represents the production of corn in Maryland. You will note that ordinarily the crop is worth about Sixteen Million Dollars, and you will note how far the red line extends and the loss that was sustained in corn, which amounts to approximately Twelve Million Dollars.

The same is true with hay, representing Eight Million Dollars, with a tremendous loss of nearly Seven Million Dollars. The same is true with milk, and let me point out that tremendous industry in the state and its comparison with other industries, the vital importance of what the protection and preservation of the dairy industry means. We have a total normal value of approximately Twenty-Four Million Dollars. That industry was injured to the extent of Seven Million Dollars. And yet, that does not include all of the injury, because pasture is not fully included and other losses by virtue of the purchase of feed from outside the state. But so far as our figures were available, it was an intangible estimate in arranging the loss on milk.

With tobacco we lost Three and One-Half Million, with canning crops, representing Six Million as a total, we lost Three and One-Half Million Dollars; pasture, in the neighborhood of Two Million Dollars; with potatoes, in the neighborhood of Two Million Dollars; with fruits, in the neighborhood of a Million. Wheat, rye, barley and oats were practically the only crops that gave us a normal production, as wheat, of course, came to the ripening period previous to the effect of the drought. So we received about a Thirteen Million Dollar crop of wheat including the small items of barley and oats.

There is the picture of the total normal value of these prices of products at the present time representing Eighty-Five Million Dollars, and a total loss of Thirty-Seven Million Ninety-Five Thousand Dollars.

The many difficulties, severe losses, even catastrophes, teach their lessons, and I have no doubt that the drought is going to teach the farmers of Maryland many lessons. Among others, I think it presents a wonderful opportunity for changing our rotations on many farms. In our County Agents' conference, we are going to devote our discussions to the development of a program based on the drought situation as it affects these different crops; what we may look to in 1931 as presenting an opportunity for at least reviving, revising, and changing the relative rotation of crops in our state as a whole. We would like the Farm Bureau to join with us and with other organizations in considering the setting up of a five-year program for the agricultural industry of the state. I believe that the leaders here represented, with our associates and specialists, could devise a goal in production work, in marketing and distribution that would give us not only a goal to work for, but which would present a challenge to the farmers and farm women of the state.

As an illustration of what this might accomplish I don't think it takes an imagination on the part of any of us to realize the national situation today, to recognize that Maryland, as to its products that are going to be demanded by human beings, located as we are in a preferred position in the world, should devise a program to feed the teeming millions within our reach; and we should study the nation and raise those crops with which we can successfully compete with farmers in other sections of the country.

I asked Mr. Oldenberg to think over, for instance, a five-year program in farm crops for Maryland, and I only want to mention some of these features for you to be thinking about and for the County Farm Bureaus to be thinking about with the hope that we can go back home, have a meeting of the county directors, and consider what would be a five-year program for the respective counties of the state.

For instance, we raised 700,000 acres of wheat during the war period in Maryland. We have reduced that acreage to 500,000 this past year. It is no fairy tale to say that we cannot successfully compete with the wheat growers of Kansas or the great wheat section of Colorado; nor can we compete with the peasantry of Russia and with the tremendous developments taking place in that country; nor with wheat, which is a world product, being raised in many other sections. It should not be our goal, it seems to me, to compete in a field that is preoccupied and where this crop can be raised cheaper and easier than it can be raised by the farmers of Maryland.

Therefore, if it is a wise program to gradually reduce the acreage of wheat, then you have a right to ask what could be substituted in the place of it. This must be a gradual program, and we only submit that there is winter barley, there is oats, there is legumes, including alfalfa, clovers, sweet clover, and soy beans. There is the permanent pasture that we should develop for the protection and development of our dairy industry, including the permanent, the rotational, and the emergency. Is it practical to spend Seven to Eight Million Dollars a year outside of the State of Maryland to buy concentrates for our dairy cows? That is what we are doing today, friends. And is it not a practical thing to consider raising some of these concentrates for our dairy cattle? Is it practical for the dairy farmer to feed his cows in the barn at a very close margin of profit, if any profit at all, when the major profit will come from feeding his cows on pasture? Is there an opportunity for us to consider the revenue that would come to the farmer who would so improve his pastures and extend the period under which they would be profitably used so that we could reduce this Seven and Eight Million Dollars that we are sending out of the state every year for the purchase of concentrates?

I won't dwell on this longer. I only mention that the specialists believe that barley can be substituted for wheat where more grain is needed for feed; on land free or nearly free from acidity it outyields wheat by about fifty per cent. It is better feed and a better nurse crop. Only a few thousand acres are grown in Maryland. Fifty thousand acres should be the acreage at the end of five years.

In the case of oats, five to ten thousand acres have been grown yearly during recent years. The acreage has not increased on account of the prevailing low yield and the poor quality of the grain, due to the common practice of sowing late varieties and failing to sow early enough for best results. At the end of five years we should have 100,000 acres devoted to the early varieties which will give a satisfactory return. In southern counties of both shores, winter oats is a good substitute for wheat where more feed is needed.

In legumes, at the end of a five year period we should increase our acreage of alfalfa. It should reach at least 40,000 acres. Where the soil is not too acid the hay mixture should be largely clovers and alfalfa on dairy farms. I am going to pass this on to the dairy group because we have a miscellaneous audience here. The same can be said of soy beans and the same can be said of the practical use of the pastures and the proper treatment and use of fertilizers to improve their return.

I want to mention this as an illustration: A survey of 350 farms last June by the Extension Service showed that in spite of the fact that many farmers treat their seed wheat every fall and buy seed already treated for the control of smut, so many do not treat their seed or take other precautions that the disease is spreading year by year to more and more untreated fields. The survey showed that a large percentage of the fields have some smut, and 37 per cent of them have one per cent or more; some have as high as 50 per cent of smut in their wheat. A late, wet, cold fall is favorable for the development of the smut, whereas, if the season is hot and dry like this year, the damage does not show up to such a serious extent. Give them a favorable season, and in the majority of fields a large part of the crop would not be fit for flour.

I only want to make passing reference to certification of seed, a project only started, and which we can develop to an enormous extent in the state. I thought, Mr. Chairman, that in order to stimulate your thought in the picture of Maryland in the future agricultural survey and development, you might be interested in the canning crops industry. We have had prepared some charts by our associates in the service, and I use those that I used at the Tri-State Packers Association recently. I wanted to show you the extent of the canning crops industry and how it will work into a future program of raising food products for people, and I will pass through these charts very briefly, having in mind that in looking at the state's agriculture you will recognize the canning industry. If we could only get the canners and the farmers to see the vision of a high class product that would place the food of the State of Maryland in a grade that would command the confidence of the American Public —the dairy industry, the canning industry, the poultry industry, supplemented by such developments in live stock and other crops as I have mentioned—we really would be working our way to a constructive program of prosperity for the agriculture of the state.

Just hurriedly I want to say that this presents a picture of the canning factories in Maryland. All of these dots represent canning houses. Where there are blocks it shows the canning house cans both tomatoes, peas, and corn, perhaps lima beans and perhaps string beans. Most of us have thought in terms of canning tomatoes. Some of us have thought perhaps of peas and corn. There has been, however, a gradual development in recent years in a great variety of products that offers quite an opportunity.

That is just a picture of the canning house locations. You will notice Frederick, Carroll, and Harford Counties on the Western shore, and Talbot, Caroline, Dorchester, and even Worcester and Somerset on the Eastern shore present an interesting picture of the canning industry. And mark you, in dairy and other major farm operations where you can have a successful cash crop for canning, profits would increase very materially.

The next chart will give you a picture of the value of this industry in the state at this time. It would present an interesting opportunity for you County Farm Bureau directors with your County Agents to insert the possibilities of each county in the future. Here we have the production of raw products in Maryland for four years from 1926 to 1929. Starting first we have snap beans in the production of tons on the left. This is the snap bean with 20,000 tons. Sweet corn you see varies. This is a four year average. I want you to think in terms, too, of the variation in these crops. It shows some of the difficulties that farmers must always confront, not only the drought this past year, but we always have ups and downs, either a wet season or a dry one. Here is the corn. At one time it went up to 60,000 tons, another time it was down to 40,000. There is a big variation of 20,000 tons.

Spinach is coming into the picture; peas with a production of over 20,000 tons. Notice that tomatoes in 1927 went up to 140,000 tons. Then the following year they dropped way back to less than 80,000 tons. See the tremendous variation in the crop. The next year it came back. Can you see how prices are affected when we have a tremendous production followed by a very limited production? See the intricate problems that are involved in this great farming industry. See the mental stimulus that it presents to every man in this room, "I am engaged in a business that will use all the brains that I can command and that my family can command in order to study this problem, work it out advantageously."

Lima beans are only coming into the picture, but have quite an effective little start, about 10,000 tons. Over $200,000.00 go out of the state each year to buy sweet corn seed. We have done wonders in the tomato problem in the last five years. We are now raising over 3,000 pounds of fine selected tomato seed that has been a wonderful yielder and has been quite a factor in improving our tomato yields. I don't know of anything that gave me more pleasure than just recently to present gold watches to three distinguished farmers in Maryland who had entered the ten-ton contest of raising tomatoes and even during this past year with the drought raised over ten tons. I think I have the record with me, and I want to read it to you because you are proud of them as well as we are.

Incidentally, to show you how progress is being made, in 1929 we had 126 growers who registered in the ten ton tomato contest. In 1930 we had 254. That is real progress, folks, when we can get 254 growers in tomatoes to obligate themselves to compete to raise over ten tons of tomatoes to the acre. Of course, the drought hit them hard. But for any of you folks, like myself, who raised tomatoes, I want to tell you ten tons means many a tomato to the acre, and I take off my hat to the man that can raise ten tons. One of the winners this year was Mr. H. M. Morris, of Cecil County, who had two and a third acres and who raised 11,085 tons to the acre in the face of the drought. In Harford County our great distinguished, chivalrous, wide awake farmer and dairyman, Mr. F. C. Jones won. (Applause.) He had an acreage of four and a half acres and he had a yield of eleven and fifty-two hundredths tons per acre, and it was with a great deal of pleasure that we gave Mr. Jones a gold watch.

The third winner was Mr. Charles Singer from Dorchester County, with an acreage of ten acres. Think of it now, ten acres of tomatoes, and he had a yield of ten and one hundredth tons per acre, in Dorchester County this past year. That shows the possibilities, friends. It shows what we can do when we set out to accomplish a definite goal.

On this chart, the value is shown. You understand we have been speaking of production. The value shows how the crop runs into money, what it means to the farmer in the value of these canning crops. Just briefly, let us consider the value of snap beans in dollars. Ten years ago we never heard of a snap bean raised in Maryland for a vegetable, nor even five years ago, but we have now a snap bean industry of $500,000. The sweet corn industry in one year amounted to $1,000,000 to farmers. There were drops, of course. Spinach amounted to $250,000, peas $750,000, tomatoes $2,250,000 in one year. Then tomatoes dropped back to $1,000,000.

Now think of it, think of a variation in the pocketbooks of the Maryland Farmers in one year of all that money. In 1928 they reached over $2,000,000 in tomato values, and the next year dropped back to less than a Million, then the following year reached a high point of $2,250,000. Gentlemen, there is a real industry. There is an industry where we are competing with the Italian peasant. There is an industry where we are competing with the California progressive farmer. If we could get our yields up, and if the farmers and the canners would agree upon a common grading basis so that when a housekeeper buys a Maryland canned tomato she is buying the best that science and practice can put together, we would have a market, a good market for all of our products.

Here is an interesting thing. I don't want to dwell on it, but I do want you to see it. These have been farm values that I have been presenting. Now, the farmers are handing this raw product over to the manufacturer or the packer, and this chart represents the packed goods in cases of those different commodities, and it simply gives the story of production in cases which is comparable, of course, to the production figures. But the next chart is where a signal story is told. The farmer carries a ton of tomatoes to the factory. He may get $15.00 a ton. Now, then, the processer takes it, and an industry that was worth Two Million and a Half, mark you (for you will remember the value of the tomato industry was Two Million and a Half to the farmer), is taken by the packer and made a $14,000,000 industry. So that we have a similar story in each of these crops when it is packed for the consumer. We have a jump in value of many hundred per cent. That is simply a story of the cases packed and the value of the canned products in Maryland with the cases on one side, showing the variation of these crops, and the value in dollars on the other side, $2,000,000 for snap beans, no small industry, and the drought hit these folks awfully hard. I don't suppose there is an industry hit quite so hard as was the canning industry.

The wax beans, the sweet corn run into Four Million Dollars, the spinach, the peas, and the tomatoes Eight Million Dollars, and there are the lima beans and beets. I simply felt that it might be interesting to give you a picture of that single industry that extends over many sections of Maryland and which should be included in a five-year program. This has a future in the State of Maryland, we can compete successfully with other sections, and bring a cash crop to our farmers that would be well worth while.

Mr. Chairman, I perhaps have only started, and I must conclude. I should like to refer to the progress in marketing. I should like to refer to the cooperation of you folks and other organizations in the marketing conference last summer. I should like to refer to the fact that I am sold on the idea that we should concentrate our minds on marketing, and I hope that our whole force will be animated by a spirit that will lead them to study as we have never done before what we really can do in the marketing and distribution field.

We have been talking production, it is true. You farmers have been studying production. It is very essential as I have shown, and yet, we have an opportunity in the marketing field that I believe we can capitalize on, and a five-year program that should be developed by the brains of Maryland farmers should include a developing program such as Mr. Stewart mentioned in his report, and the progress it has made to date, and the great possibilities of the future.

I should like to direct the attention of this organization to another field that is equally important. I have a letter that I wrote Mr. Stewart on April 18, 1927. It was in the days of the McNary-Haugen Bill, and I just happened to look over the letter the other day to see how some of those suggestions would fit into the present situation. I would like to read it, but I won't take the time. I will say that in the conclusion after many general statements in connection with the situation I did venture these assertions:

That if I were Director General or czar of all agricultural land in Maryland, I would probably follow the following suggestions, and I can see no reason why our organization could not look at the State of Maryland as being a pearl that we can hold in our hand, and the question is how the organized interests, buttressed by the individual farmer and farm family, are going to handle that delicate pearl. There are poor pearls and fine pearls, and the poor pearls, as represented by the marginal land, should be set aside and we should concentrate and handle with greatest efficiency those pearls of farms and farm homes that are going to develop the prosperity and the love and the hope as well as the faith of the agricultural industry in this state.

I would make a study of all products that could be economically produced and the relation that existed between the cost here as compared with the cost of raising the same products elsewhere. If on a national basis, I would consider the advantage and disadvantage of tariff protection.

Second, I would try to analyze the effect of the tariff on products that the farmers were buying and the costs that were added to those products by virtue of the tariff policy on the part of the Government. Understand now, I was speaking as a czar or director general of agriculture.

Third, I would try to determine the particular products that could be raised in this state with the highest quality at the lowest cost.

Fourth, I would proceed to organize the district so that we would produce varieties of products in sections to which they were naturally adapted, and I would standardize the product on the basis of the demands of the market.

Fifth, I would see to it that poor grade stuff did not get into competition with the quality products that I would wish to establish on the market.

Sixth, I would arrive at an equitable basis of adjustment between land owner and tenant so that there would be an impartial arrangement for the proper distribution of returns from the land consistent with the proper maintenance of fertility of the soil.

Seventh, I would erect such cooperative groups in connection with each product as would be necessary for the proper distribution and sale of same.

Eighth, I would plan for wholesome community life, which is so essential to contentment in farm life, and I would insist upon its being developed to the greatest extent involving the social, educational, and religious viewpoints.

Ninth, I am certain that from a national as well as a state standpoint I would look into the question of costs of transportation and other public costs, and ascertain whether the large increases that have been secured in recent years are justified. I believe that there is a wonderful opportunity for our organization leaders to display that type of constructive leadership that will instill confidence and check for all time the propagandist who aims to play upon the passions of the uneducated or innocent for personal or political purposes. I naturally feel that we would extend our educational facilities for the benefit of farmers and their families consistent with wise and economical expenditure of public funds, as undoubtedly fundamentally our people need more education in the science and practice of modern agriculture. I feel reasonably sure myself that another important phase of this subject that enters into the whole subject of farm relief, the price of farm products, etc., and the future of the agricultural industry is the monetary policy of the nation.

I believe that we will find that periods of agricultural depression will coincide with periods of monetary contraction, and, depending upon the length of recovery periods incident to the character of the agricultural industry, that agricultural prosperity will be accompanied by monetary expansion.

These are just some wandering thoughts that I have concerning this subject. It is one that requires deep consideration. I believe that many of the problems can only be attacked singly, that no universal farm relief can be secured which will solve the problem, that we can only expect such assistance from the Government as can be utilized by the farm groups in increasing their efficency to meet the competition confronting agriculture, and that we must conserve our agricultural resources and protect our industry for the farmers of the American nation.

Mr. Chairman, I am sorry I have taken so long. I thought it was interesting. This letter was dated April 18, 1927. I now propose that this Farm Bureau organization invite in other groups so that we may be able to approach perhaps a definite, consistent program. We might restrict it to five years and see what we can do towards enlisting the cooperative, organized spirit of the American farmer, capitalize on the brains that are lying dormant in our homes and on our farms, get them to come together in a strong unit, and erect a program for constructive leadership and development that may mean and will mean prosperity and satisfaction to the farmers as well as their good families of the state.

I thank you, Mr. Chairman. (Applause.)

CHAIRMAN COHILL: Fellow farmers, that is a practical work, and isn't it a pity, as was said last night, that it won't reach more than half of our farmers? Speaking of Maryland, why, we have the markets. Just a few years ago I was interested to know what New York consumed in the way of apples. I found they averaged fifty carloads of apples a day in New York City, 150 carloads of potatoes a day, 50 carloads of onions per day. There are 3,100 cars of food going into New York City every day, and a great portion of it goes right through Maryland. That is something for us to think about.

Next on the program is the Roll Call of voting delegates.

CHAIRMAN COHILL: Those names which have been read will have a vote in all proceedings that will come up before this meeting, and they are the only ones that have a vote. There are only three women with votes. There should be more. This Farm Bureau is a family affair, and there ought to be a woman from each county here.

The next is the Report of the Committee on Constitutional amendments. No committee was appointed. The next is the Report of the Resolutions Committee. Mr. Massey is Chairman.

MR. MASSEY: Mr. Chairman, the Committee is ready to report, and I will ask Mr. Payne to read the resolutions. There is one resolution that is practically the same as we adopted last year on taxation. It may not be necessary to read that one.

RESOLUTIONS

No. 1.

We commend the Maryland and American Farm Bureau Federations in their work during the past year and pledge during the coming year our wholehearted support in assisting the officers in carrying out the program of the two organizations.

We hereby extend greetings to all farm organizations and stand ready to cooperate with any organization wherein by so doing we can better agricultural conditions. (Adopted.)

No. 2.

Whereas, it is, and has always been the object of the Maryland Farm Bureau Federation to cooperate with the American Farm Bureau,

Be It Resolved that we give our unqualified endorsement to the resolutions as passed by the American Farm Bureau Federation in its Convention held in Boston, December 8-9-10th, 1930. (Adopted.)

No. 3.

Drought Relief

We especially commend the efforts of the State Drought Committee appointed by our Governor, Albert C. Ritchie, in its endeavor to raise funds through the Drought Loan Corporation for the purpose of aiding those farmers who can not receive credit from local sources. The need is imminent and failing to function in the very immediate future, we recommend that this State Drought Committee apply to the legislature for an appropriation. (Adopted as amended.)

No. 4.

Weights and Measures

Realizing the importance of fair and just measurement in the handling of farm products, and appreciating the flagrant abuse and sometimes fraud practiced by the use of Dry Measures in the measurement of commodities, and desiring to eliminate this condition, therefore be it

Resolved, that this Body in Convention assembled this 9th day of January, 1931, in the City of Baltimore, does hereby recommend and approve such Legislation as will require, except when governed by specific agreement between the seller and purchaser, the sale of such articles, commodities, produce, etc., as are at this time usually sold by dry measure, to be sold by Avoirdupois weight of Numerical count, not affecting, however, the handling of such commodities when dispensed in original covered packages, or in such packages, barrels, boxes, etc., as are now legalized by Law, and it is further

Resolved, that this Body request of the Governor and the present State Legislature the passage of an Act to accomplish this desirable Legislation. (Adopted.)

No. 5.

Weights and Measures

The need of Official and regular Inspection and Testing of all weighing and measuring devices, Scales, Weights, Measures, Pumps, etc., in the State of Maryland being so apparent from the present condition of such Scales, Pumps and etc. in use for commercial purposes, and in line with just and fair business dealings, and for the protection of Farmers, Merchants and other Citizens of the State, be it therefore

Resolved, that the Maryland Farm Bureau Federation in Convention assembled on this 9th day of January, 1931, in the City of Baltimore, does hereby earnestly request that ample provision be made by the State of Maryland at this time to supervise, test and inspect all weighing and measuring devices used in trade or places of business so as to insure the Citizens of Maryland of their accuracy and conformity with the Legal Standards of the State, and be it further

Resolved, that this Body, through its proper Officer, communicate in writing with the Governor of the State of Maryland, requesting such action be taken at this session of the present Legislature, as will provide for a competent and efficient Department of Weights and Measures. (Adopted.)

No. 6.

Butter Substitutes

The increasing use of imported vegetable oils is very harmful to the dairymen, to the producers of our vegetable oils and to our animal industry. We favor federal legislation which will require the payment of the federal tax on any and all oleomargarine products made in the form or semblance of butter, whether or not such oleomargarine is colored artificially or naturally. We urge the use of butter instead of oleomargarine in federal and state institutions. (Adopted.)

No. 7.

Forest Conservation

We commend the action our state has taken in the conservation of our Forest, Streams and Natural Resources, and petition our legislature that they make the necessary appropriation to carry out the program as outlined in our resolution as passed last year. (Adopted.)

No. 8.

Papers of Pure-bred Stock

We petition the legislature to enact a statute to bring within the preview of the Criminal Code failure to deliver papers with the purchase of pure-bred stock when said papers are a condition of the sale. (Adopted.)

No. 9.

Punishment of Poultry Thieves

The loss to the poultrymen and to the farmers of Maryland by the theft of poultry and other petty thieving has gradually increased to the point where drastic measures must be taken, and to this end, we urge our legislature to enact a law providing the punishment of the whipping post for these offenders at the discretion of the Court. (Adopted.)

No. 10.

Protection Against the Disposal of Stolen Poultry and Live-stock

We recommend that our legislature co-operate with our sister states by enacting an adequate law making it compulsory of any dealer in poultry and live-stock to maintain records of their purchases to the end that it will assist in the apprehension of the criminal when disposing of same. (Adopted.)

No. 11.

General Taxation Principles

I. We approve and support the American Farm Bureau Federation in the following cardinal principles as indispensable features in any fair taxing system:

1. The significant facts of any system of taxation, including its social and economic effects, should be under constant and impartial scrutiny and should be given the widest possible publicity as the only proper basis for intelligent modification of any taxing system.
2. Except for the purpose of equalizing economic opportunity, no special consideration should ever be given to any industry, locality, or class of persons.
3. Every person owning or operating property for profits, or profitably employed, should, in proportion to his ability, contribute to defray the cost of government, national, state and local. So far as possible, every tax should be universal and direct, for no system of total exemption from taxation or of indirect taxation can promote a wholesome and general public interest in efficiency, economy and honesty in the administration of government.
4. Every legitimate tax must be, directly or indirectly, a levy on net income as the only equitable measure of ability to pay the tax.

II. The present property tax situation:

Estimates by economists indicate the comparatively small percentage of the total national income which is derived solely from the ownership of property, whether rural or urban. If a fair allowance is made, as it should be made, for the labor and management of owner-operators, the ownership of property does not produce more than one-half or one-third, and, in most of the states, one-fourth or one-fifth of the total income of the entire population. Yet, in every state the ownership of property is compelled to bear almost the entire cost of government. In most states, no direct tax whatever is levied upon the larger portion of total net income which is derived from personal industry, thus exempting the greater portion of the population from the payment of substantial taxes.

With a decreasing percentage of population owning property which is easily taxed, and an increasing percentage depending upon wages, salaries, fees and commissions as sources of income, the gross unfairness of our present state taxing systems is gradually becoming worse. Because of the destruction of property values resulting therefrom, foreclosures and tax delinquency are reaching alarming proportions in many states.

III. Tax policy of the American Farm Bureau Federation:

On the principles of taxation stated above and the statement of the present property tax situation in the various states the American Farm Bureau Federation:

1. Asks for agriculture no advantages or special favors in national, state or local taxation, but does ask for equitable treatment in taxation.

2. Offers its co-operation to and invites the co-operation of all other organizations and industrial groups in securing constant and impartial study of the facts of taxation, including the social and economic effects thereof.

3. Urges that as rapidly as feasible, net income be recognized by the states as the most equitable basis for taxation.

4. Asks that the various states and the Federal Government, for the purpose of equalizing economic opportunities, assume in greater measure the support of the public schools and public roads.

5. Asks that the Federal Government protect the states using the income tax from the competition of states not using this tax in some manner similar to the Federal Government's protection of the state inheritance or estate taxes.

6. Urges that Congress authorize the Secretary of Agriculture to establish in the Bureau of Agricultural Economics a unit with suitable personnel and adequate funds for research in taxation and expenditures as they affect the economic status of agriculture and the welfare of rural population. We believe further, that this unit should co-operate so far as possible with state agencies, including the agricultural experiment stations, and that the experiment stations should further emphasize fundamental research in this field, using for this purpose the funds made available to them under the Purnell Act.

IV. Some recommendations for immediate action:

For the purpose of giving some immediate relief from the present grossly unfair taxation of property, the American Farm Bureau Federation:

1. Asks that the term value as used for the assessment of property be defined not as the fair cash sale or market price, the definition current in most of the states, but as the average capitalized net production value as used in Europe.

2. Recommends that owners of real estate, urban and rural, in most of the states urge the enactment of state income taxes, with moderate exemptions and moderately progressive rates, to replace part of the present taxes levied on property.

3. Supports proper control of expenditures by requiring publication of proposed budgets or bond issues before their adoption, and by permitting a reasonable number of taxpayers to appeal from proposed budgets or bond issues to

state tax boards, the hearing on each such appeal to be held in the taxing district concerned.

We recommend that the officers of the American Farm Bureau Federation invite representatives of all national industrial groups and organizations to a conference to discuss the formation of a national commission on taxation, which shall study and recommend action on such problems as:

(a) The co-ordination and reallocation of taxing powers between the federal government and the states.

(b) Adequate recognition by state and national governments that the benefits of education and highways are not local but are largely state wide and national and that the burden of their support should be equitably distributed.

(c) The cooperation of all national groups in securing the proper re-organization of taxing districts and political sub-divisions, in establishing control of budgets and bond issues by tax payers, in establishing better methods of assessing and levying taxes, and in insuring the most rigid economy in the expenditure of public funds.

(d) The use of taxes derived from new sources to reduce the present unjust taxes on property, especially real estate.

(e) Further use of power of the Federal Government to limit unfair competition among the states in any forms of taxation.

We further recommend that the conference consider the establishment of such a national commission on taxation on a permanent basis with funds adequate to enable it to employ a proper staff of experts for its service.

We finally recommend that the proposed conference be held in some middle Western city in January or early in February, 1931.

4. Urges the study of retail sales taxes on carefully selected commodities.

5. Recommends resistance by property owners to further increases in tax levies, either for existing purposes or for new purposes, unless the additional funds required therefor

are provided from sources other than the general property tax.

6. Recommends an impartial survey, supplementing the Federal forest taxation inquiry, to secure reliable information for the solution of the acute problem of state and local taxation, arising out of the fact that the Federal Government owns a considerable portion of the land area of many of the states, thus largely withholding that land from state and local taxation.

7. Favors the establishment of a department of taxation in the American Farm Bureau Federation as soon as the necessary financial means therefor can be provided.

No. 12.

Funds for Agricultural Extension

Co-operative marketing and the economic problems of agriculture have been recognized by and incorporated in such federal laws as the co-operative marketing act and the agricultural marketing act. All representatives of the federal government, therefore, should not only feel free to, but should cultivate the desire to advance the economic and co-operative marketing program of agriculture. With this end in view we strongly urge Congress immediately to provide ample funds with which to co-operate with state, county, or membership funds in furthering agricultural extension work in order that the official representatives of this work may be removed from local influences antagonistic to co-operative marketing, and may be correlated with the work of the Federal Farm Board and of farm organizations.

No. 13.

We express our thanks to the Lord Baltimore Hotel, the Mayor of the City, and the efficient Police Department for the many courtesies extended us, and to the press of Baltimore and the counties of the state for the publicity given this meeting.

COMMITTEE.

. . . Mr. Payne read Resolution No. 1 . . .

MR. MASSEY: I move the adoption of that resolution.

. . . The motion was seconded by Mr. Frederick and carried unanimously . . .

. . . Mr. Payne read Resolution No. 2 . . .

MR. MASSEY: I move its adoption . . .

. . . The motion was duly seconded and carried unanimously . . .

. . . Mr. Payne read Resolution No. 3 . . .

MR. MASSEY: I move its adoption.

. . . The motion was duly seconded by Mr. Parran . . .

DR. SYMONS: I think we might mention that an appropriation has been passed by Congress, and will be available to citizens of Maryland under regulations that provide for seed, fertilizer, feed for animals, and perhaps there will be a wider interpretation of the act by the Secretary of Agriculture so as to provide for spray materials and other necessary factors in connection with operating farms. These regulations will be out shortly, and with the help of all of our organized interests I feel sure we will be able to meet the reasonable demands of farmers.

The State Loan Corporation is being formed, has been formed, and we are now endeavoring to raise money through the Clearing House of Baltimore which has passed a resolution that they will put up $25,000 when $25,000 is raised by subscriptions. A number of personal subscriptions of $500.00 have already been made. Letters are now out to leading citizens who might wish to take stock in that corporation. That money would be considered by a committee headed by Mr. Walter Newcomer and associates, Mr. Davis, Mr. Heaps and representatives of banking and associated industries in the state. So we hope these funds will be available for the needs of the farmers.

In regard to this resolution, I think it would be well to point out that you have incorporated a request to the State Legislature for funds. That has not been the policy of the State Drought Committee. It is perfectly proper for this Association to consider this in the light of the money that has been appropriated in Washington—I am just wondering whether you would wish to make that statement and pass a resolution to that effect.

MR. MASSEY: Dr. Symons, the Resolutions Committee felt that money appropriated by the national government would not reach farmers who now need money to pay taxes and other bills.

DR. SYMONS: You are perfectly right. The government money will not be used for taxes.

MR. MASSEY: There are lots of bills that the farmer has outstanding today, and if he doesn't get assistance he won't need any fertilizer next spring or any seeds. (Applause.)

CHAIRMAN COHILL: I don't know whether you are for or against the resolution, or are you just explaining it?

DR. SYMONS: I was just explaining the situation.

MR. PARRAN: In view of what Dr. Symons has said, I think it is very good policy, I think it is no more than we should do, to pass a resolution thanking Governor Ritchie for his efforts in behalf of the farmers. The commission that has, as a result, been formed, as just stated by Dr. Symons, is making an effort now to raise money to loan to those farmers who are unable to buy seed or anything else. So my belief is that that commission will be able to get relief to our people in time. I don't believe the government will be able to furnish the money for this. They will be able to furnish money for seed and fertilizer and that is an end of it, but I don't believe the Legislature here in Maryland is going to pass an appropriation making a direct loan to these farmers in view of the fact, as has been well stated, that a very large committee, and a very able committee, and men of great financial acumen are going to raise a fund for just the purpose that this resolution calls for. I certainly can't see the reason for adopting this whole resolution. I would amend this resolution in a way—I think it is all right to pass this resolution, I would say, down to the words "sources" in the fourth or fifth line, and strike out all the rest of it, because I believe that Governor Ritchie and this commission that he has appointed will give relief if it is necessary to our people in the state sooner than any legislation we can get from the Legislature of Maryland.

Therefore, I make a motion to amend that resolution by striking out everything after the word "sources". I simply make that amendment for the purpose of discussion and to open up the question.

. . . The amendment was duly seconded . . .

MR. LOWE: I think this Drought Relief Corporation is a fine thing, but you realize the need is far beyond what we can ever hope to raise by popular subscription. I happen to be on the local committee in our county, and I think we have subscribed around $700.00 which you know is nothing compared to what the farmers need right now, and not in two or six months or some other time. We need it now. It is an emergency proposition, I think, and I think it is a serious matter not to be passed over lightly. I think we should call the attention of our Legislature to the seriousness of the situation. Lots of our farmers I know down on the Shore there are in serious difficulties. If they are borne down on pretty hard, the man that has got collateral can go to the bankers all right, but it is difficult for the fellow that has no collateral. He has got to have something with which to tide over himself and his family.

It isn't only this past year, when we had the drought, but we have had other poor seasons when the farmers have been up against it more or less. A good many of them have just been carried along, and if the banks and credit system bear down on them too hard they are going to be foreclosed and sold out. It is a critical situation. I don't like to throw cold water on your spirits, but I think it is something we should face, and it is a service we have got to render to our farmers in bringing the seriousness of this situation to the attention of the public.

MR. PARRAN: Mr. Chairman, understand me, I haven't the slightest objection in the world to calling upon the Legislature of Maryland for help or aid, but, in face of the fact that Dr. Symons said the Federal Government has already passed a large appropriation and that it would be superfluous for us to pass a resolution asking for further aid from the Federal Government, and because of my confidence in this committee which has been formed, this drought relief committee, a commission that Governor Ritchie appointed which will function immediately if there is a demand and need shown. I do think that this committee will function according to the necessity of our farmers, or else the Governor would have taken some means of mentioning it in his message to the Legislature.

That is the reason I believe at this time it would look as if we haven't any confidence in that commission and that we were going over their heads and over the acts that Governor Ritchie and this commission are taking and have taken, if we were to go to the Legislature and ask for an appropriation which I believe you will never get.

MR. MASSEY: Mr. Chairman, I think Mr. Parran didn't read this Resolution. Speaking for the Resolutions Committee, those words he wants to strike out are "The need is imminent and failing to function." We thought that that commission might fail to function. Why, I don't believe it is possible in this state to get enough money to lend to the farmers for their needs. It says there "and failing to function"; then we ask the Legislature for help.

SECRETARY STEWART: Mr. Chairman, may I ask for some information from Dr. Symons? I have not seen the bill that has been passed by Congress. I know the usual policy is that when the Federal Government appropriates money of this nature it is usually with the understanding that the state that is to be benefited is to match it with a like amount.

MR. PARRAN: Oh, no.

SECRETARY STEWART: In a good many cases, I say, that has been the policy. Now, is the present Federal bill that has been passed going to make that kind of a requirement?

DR. SYMONS: No, the present bill which they have already passed upon is an item of $45,000,000 for the drought areas. It does not require a state offset. The conditions surrounding the loan of this money, under the Secretary of Agriculture, to farmers are for seed, fertilizer, and such other broad interpretations as the Secretary might make. You will notice in the press that the word "food" was cut out. The Secretary of Agriculture was very much opposed to the use of the word "food." I believe loaning money to farmers for food raises certain issues within the labor movement in other lines, and that it would be wise to have a broad interpretation. That is the Secretary's point of view. I noticed in the press the other day, notwithstanding the difficulties in Arkansas and the passage of the Senate resolution granting $15,000,000 for food, that it was turned down in the House. Whether that will be adjusted later is to be decided ... ...

SECRETARY STEWART: Isn't it true that Representative LaGuardia of New York is holding up the work of the conference because of that word "food"?

DR. SYMONS: That is the extra $15,000,000, in our preliminary discussions. I will say this, I don't think there is any question of the sufficiency of the amount of money from this source to supply the needs of the Maryland farmers for those particular purposes with the restrictions that necessarily surround the loan, with the credit lien on the crop, and perhaps the money will be loaned as previous loans were, for about one or two years. I assume this will be on the same basis.

As for the Drought Loan Corporation money—we have pamphlets which state specifically how this money will be loaned. I have a number of them here. It will be for purposes as outlined by Mr. Massey, but the committee itself does not know what will be the ultimate response of the citizens towards taking stock in that corporation as an adjunct to the Federal loan.

MR. PAYNE: I would like to clarify the meaning of this resolution. First we certainly have given a hearty endorsement of this drought relief. Secondly, we have stated in both suggestions that we want this committee to function, and if it can't function as it is now functioning, to take advantage of the other sources of relief. From the start to the finish of the resolution it is said that we are looking upon this Drought Relief Committee as a source of relief for the Maryland farmer.

MR. PARRAN: I think it would be superfluous and I certainly would strike out that part of the resolution, and that we ask further Federal aid to carry out the things for which the committee was formed. The Government has appropriated $45,000,000 for our farmers, and even if you want to go over the heads of this committee that has been appointed by Governor Ritchie to raise this money for the farmers, I certainly would strike out the remainder of the resolution after that word "appropriation" in the third line. How is that, Mr. Massey?

MR. MASSEY: The Resolutions Committee, I believe, is agreeable to drop that off. After the word "appropriation" in the third line from the bottom, strike out everything.

MR. PARRAN: I will withdraw my amendment and offer that one instead.

MR. COCKEY: I second the amendment.

. . . The motion was put and carried unanimously and the amended resolution adopted . . .

. . . Mr. Payne read Resolution No. 4 . . .

MR. MASSEY: I move the adoption of the resolution.

. . . The motion was seconded by Mr. Parran and carried unanimously . . .

. . . Mr. Payne read Resolution No. 5 . . .

MR. MASSEY: I move the adoption of the resolution.

. . . The motion was seconded by Mr. Cockey and carried unanimously . . .

. . . . Mr. Payne read Resolution No. 6 . . .

MR. MASSEY: I move the adoption of the resolution.

. . . The motion was seconded by Mr. Lowe and carried unanimously . . .

. . . Mr. Payne read Resolution No. 7 . . .

MR. MASSEY: I move the adoption of the resolution.

. . . The motion was seconded by Mr. Parran and carried unanimously . . .

. . . Mr. Payne read Resolution No. 8 . . .

MR. MASSEY: I move the adoption of the resolution.

. . . The motion was seconded by Mr. Parran and carried unanimously . . .

. . . Mr. Payne read Resolution No. 9 . . .

MR. MASSEY: I move the adoption of the resolution.

. . . The motion was seconded by Mr. Cockey . . .

MRS. WILLIAMS: I would like to substitute the use of the word "poultry" for "chicken". We had 75 turkeys stolen in Kent County Monday.

MR. MASSEY: It says "thieves of poultry".

CHAIRMAN COHILL: We can correct the heading.

MR. PARRAN: I make a motion to strike out the word "chicken" and substitute "poultry".

SECRETARY STEWART: Why limit it altogether to poultry? There is a lot of other stuff being stolen on the farms. Why not petty thieving instead of poultry thieving?

CHAIRMAN COHILL: It says "poultry and other petty thieving."

MR. MASSEY: Mr. Chairman, I think it would be proper to use "punishment of petty thieves." That includes any kinds of thieving.

MR. PARRAN: Why not just put "punishment of thieves" and strike out "chicken" and then just leave it as it is?

CHAIRMAN COHILL: I think we ought to bring in poultry thefts, and I think it ought to be in the headlines.

MR. PARRAN: I move we strike out the word "chicken" and substitute "poultry" in the heading.

. . . The motion was duly seconded and carried unanimously . . .

. . . Mr. Payne read Resolution No. 10 . . .

MR. MASSEY: I move the adoption of the resolution.

. . . The motion was seconded by Mr. Parran . . .

MRS. WILLIAMS: I would like to add New York and Delaware in there. They found just last week in Wilmington a place where they could kill 500 pieces of poultry at one time, a place used by thieves. It is only two hours from Wilmington to New York.

MR. LOWE: We can't legislate for other states. Pennsylvania is planning such legislation, and it is the only one that is so far, and we want to cooperate with them as far as we can.

MR. HORST: Embody in the resolution that more attention should be given by the state police to trucking. I don't understand how a truck can go over a road and travel a hundred miles at night and get away with hauling stolen poultry and never be stopped or molested at all.

MRS. WILLIAMS: I would like to ask why our local dealers in our own counties, people who buy poultry from us, buy from the people who steal them, too. But they do it; they don't ask any questions.

MR. PARRAN: I believe if that resolution is to be made into a law the legislators will work out all the details.

MR. MASSEY: Mr. Parran, don't you think it would be better instead of saying "sister state of Pennsylvania" to say "Pennsylvania and other states" or "adjoining states"?

MR. PARRAN: That is all right.

MR. MASSEY: I move this amendment, that our Legislature cooperate with our sister states, and leave out "Pennsylvania."

. . . The amendment was seconded by Mr. Lowe and carried unanimously . . .

. . . Mr. Payne read Resolution No. 11 . . .

MR. MASSEY: I move the adoption of the resolution.

. . . The motion was seconded by Mr. Parran and carried unanimously . . .

. . . Mr. Payne read Resolution No. 12 . . .

MR. MASSEY: I move the adoption of the resolution.

. . . The motion was duly seconded by Mr. Parran and carried unanimously . . .

. . . Mr. Payne read Resolution No. 13 . . .

MR. MASSEY: I move the adoption of the resolution.

. . . The motion was seconded by Mr. Cockey and carried unanimously . . .

MR. MASSEY: Mr. Chairman, I would like to make a motion that we adopt the report of the Resolutions Committee as a whole.

. . . The motion was duly seconded and carried unanimously . . .

MR. PAYNE: I have one more resolution that was handed to me, a Resolution on the Home and Community Committee.

"*Resolved,* that it is the sense of the Home and Community Committee of the Maryland Farm Bureau Federation that as soon as funds are available a woman worker be employed to assist the community meetings and strengthen the work of the Farm Bureau."

This resolution was passed by the Home and Community meeting.

MRS. WILLIAMS: I move the adoption of the resolution.

. . . The motion was seconded by Mrs. Stewart . . .

MRS. WILLIAMS: I want to say this in view of the fact that I could not accept a paid position, I feel I can talk on it. In a great many of the states they have a paid woman whose business it is to work for the Farm Bureau, and you know if you have a man on your farm that is working gratis you don't think so much of him as you do if he is paid. I do believe that that is going to be the solution of the women's part of this work, because many of us are willing to do all we possibly can, but we cannot put in the time and effort that a paid woman could.

It seems to me that it is time that the farmers were willing to pay to get done the things they want to get done. You well know if you didn't have a paid Secretary you wouldn't be anywhere near along the road as far as you are today, and I believe the time has come when you will be just as far along the road with your women's work as they are in many other states, because I am going to say this, in all kindness to the gentlemen present, that the best talks and the best Farm Bureau talks that I heard either at the national meetings or state meetings were by a woman. (Applause.)

. . .There being no further discussion the motion was put and carried unanimously. . .

PRESIDENT DAVIS: Mr. Chairman, I have a resolution here that I have been requested to offer. It is a very important resolution. I think we are all vitally interested in it. It is a resolution looking to the enactment of a measure to regulate and control the manufacture, distribution, advertising and sale of oleomargarine and other compounds of a color either natural or artificial and of a texture resembling butter.

"*Whereas,* the ruling of the Commissioner of Internal Revenue relieves the manufacturers of oleomargarine and other such compounds colored to resemble butter of the Federal tax of ten cents per pound, and

"*Whereas,* such compounds are now being manufactured at an estimated cost of from twelve cents to fifteen cents per pound, and

"*Whereas,* the farmers of the State of Maryland are adversely affected by the distribution and sale of such butter substitutes, and

"*Whereas,* the consumers of the State of Maryland are adversely affected by the distribution and sale of such butter substitutes, when they are offered without a full statement as to their composition, and

"*Whereas,* the present law of Maryland concerning the manufacture, distribution and sale of such butter substitutes was written in 1900, and science and industry in the intervening thirty years have developed such facts in the production and consumption of healthful foods which should be considered in present day foods legislation, and

"*Whereas,* the present Maryland law in view of the foregoing statements is inadequate because of its methods of regulation and control, and

"*Whereas,* representative groups concerned with the truthful merchandising of essential foods are concerned with the public being properly informed with respect to any of the aforesaid butter substitutes that may be offered for sale, therefore, be it

"*Resolved,* that the President of the American Farm Bureau Federation be and is hereby directed to invite representatives of leading civic organizations to serve with him in the preparation of a measure to be presented to the session of the Maryland State Legislature now about to convene, the purpose of such measure being to prevent the deception of the buyer and consumer of said butter substitutes by the use of misleading names, containers, advertisements, or other devices, and to provide the means for enforcement of its provisions. It is further suggested that the Committee be limited to not more than nine members, and that the following organizations be considered by the President in making his appointments:

"The Association of Commerce, the Better Business Bureau of the Advertising Club, the Congress of Parent-Teachers Associations, Federation of Women's Clubs, Maryland League of Women Voters, Maryland State Grange, the Women's Civic League."

I offer this resolution and move its adoption.

. . . The motion was seconded by Mr. Cockey and carried unanimously. . . .

MR. PAYNE: There is one more resolution. The Maryland Farm Bureau appointed a committee which was composed of Dr. R. A. Pearson, E. Thomas Massey, and Dr. T. B. Symons to form this resolution which reads:

"*Whereas,* Melvin M. Stewart has served as Secretary Treasurer of the Maryland Agricultural Society, the Maryland Farm Bureau Federation for the past eight years, since the formation of the Farm Bureau in the State of Maryland, and

"*Whereas,* Mr. Stewart has voluntarily decided to relinquish this position to take up work in a new field, therefore be it

"*Resolved,* that the Maryland Farm Bureau Federation in annual meeting assembled does hereby express its deep regret in the decision of Mr. Stewart to submit his resignation, and hereby records its sincere appreciation of the signal outstanding and unselfish service that he has rendered to this organization during the formative and vital period of its history; that we commend Mr. Stewart's steadfast loyalty to agriculture and especially to the cause of farm organization and his activity in promoting the high ideals of the Farm Bureau. The important contribution that he has made towards the improvement of rural life in Maryland will not be forgotten; that we regret equally the departure of Mrs. Stewart, who has been an important leader in the home and community work, and who has endeared herself to her many friends in the Farm Bureau; that we express to Mr. and Mrs. Stewart the earnest hope that they will realize their deserved reward in abundant success and happiness in the new field of labor which they have chosen." Signed by the Committee.

MR. MASSEY: I move the adoption of this resolution by a standing vote.

. . . . The motion was duly seconded and carried unanimously by a standing vote . . . (Applause.)

CHAIRMAN COHILL: I want to add the five years that Mr. Stewart and I worked together make it a pleasure for me to vote for this resolution. Mr. Stewart, I think we ought to have something from you now.

MR. STEWART: Mr. Chairman and Friends: I don't think there is anything more I could really say except to say thank you. You don't know what that means to me, the sentiment expressed by you good folks in that paper. It makes me feel that eight years' work has been really appreciated, and that I have at least tried to do my small bit in advancing the cause for better home life on the farms in the State of Maryland and in doing our part on the long battle front with our other states in advancing the cause for better and more properous American agriculture. I thank you ever so much for this resolution. (Applause.)

PRESIDENT DAVIS: Mr. Chairman, I believe I shouldn't let this opportunity pass without expressing my feelings in regard to Mr. Stewart's leaving us. Five years ago I was elected as President of this organization. Mr. Cohill didn't leave because anybody wanted him to leave, but he felt that he had put his best into the job and it was time for somebody else to take it up. I was elected to take his place, and at that time one of the provisions I made before I accepted the position, was that Mr. Stewart be retained as Secretary to help do the job. I want to offer my testimony, that Mr. Stewart and I worked together for the last five years, and I think we have done a pretty fair job.

A short time after I was elected as President of the Farm Bureau I was also put in charge of the Agricultural Corporation. I feel that there was a job that took all of one man's time, because previous to that time two men had been on the job, and I haven't always been able to give all the time to the Farm Bureau that I would have liked to do, but I have always had the cooperation of Mr. Stewart. We have tried to do the job as well as we could. I have always been proud of his ability wherever we went—if we went to Chicago to an annual meeting or to a conference down at Washington or any other place, I know I could fully depend on his ability, because he has always given the best that was in him. He has done this faithfully and consistently, and I feel that I wouldn't be doing what I should do if I didn't express in this manner my appreciation for the help Mr. Stewart has been to the Farm Bureau in this state. While the time is getting late and I am not much of a speechmaker, I just feel that this is one time that I have got to talk a little bit. (Applause.)

MRS. WILLIAMS: May I say I would like to say the same about Mrs. Stewart. I think maybe you men don't appreciate the fact that Mrs. Stewart is about like the old colored woman I heard of. Somebody told her a man supported the world. She said, "Yes, and who supported him?" (Applause.) So I think that a great deal of credit is due to her. I know she is just as much filled with that farm enthusiasm as Mr. Stewart, because she has already planned next year's work for us before she leaves in the Home and Community Department.

Then I would like to say this about that last resolution on oleomargarine. I made it one of my New Year's resolutions that wherever I can speak for butter in 1931 I am going to, and I just heard when the resolution was passed a lot of loud "ayes," and I wonder how many of those men who said that are eating oleomargarine at home. Don't laugh. I went up to our local milk shed and was shown around by a man who uses oleomargarine on his table, and it is a disgrace. If all of the farmers who carry fluid milk, let alone the ones that don't, would use butter our butter substitutes would fall very much. Don't say you don't know what your wife buys. If you don't know, find out, and for goodness sakes, every man that is in this house use butter for 1931. (Applause.)

CHAIRMAN COHILL: The next order of business is the election of officers.

SECRETARY STEWART: Mr. Chairman, I have very nearly a set speech formula. I think this is the eighth time that I have arisen to announce the action of the Board of Directors of this Federation, which under its constitution is empowered to serve as a Nominating Committee. On Wednesday afternoon immediately after the adjournment of the convention your Board of Directors met over in Parlor A, and after transacting some miscellaneous business of various kinds unanimously nominated James W. Davis, of Harford County for President of this Federation, and E. Thomas Massey for Vice President. That is the report of the Directors.

CHAIRMAN COHILL: Are there any other nominations?

MR. COCKEY: I move the nominations be closed.

. . . The motion was duly seconded by Mr. Parran and carried unanimously . . .

MR. PARRAN: I move the Secretary cast the ballot for Mr. Davis and Mr. Massey.

. . . The motion was seconded by Mr. Cockey and carried unanimously . . .

SECRETARY STEWART: The Secretary herewith casts the ballot of this convention for James W. Davis, of Harford County for the office of President and E. Thomas Massey of Kent County for the office of Vice President of the Maryland Agricultural Society, Maryland Farm Bureau Federation. (Applause.)

CHAIRMAN COHILL: Mr. President, don't you think there is something to be said at this time?

PRESIDENT DAVIS: Mr. Chairman, Ladies and Gentlemen: As you know, I am not much of a talker, and we have had a good bit of oratory and the smoke has hardly cleared away from the very enjoyable oratory we had last night, and I think you are all tired and want to get home.

I think about the only thing I can say is that I will try to do the very best I can to carry on the business of this organization and further the interests of the farmers of this state in every way possible.

I don't think I can add to that anything that would express my feelings better. I thank you for the honor you have conferred on me, and I also wish that we can all give our new Secretary the same support and help that we have given Mr. Stewart, and I feel that we will do that, and I feel that we can go forward to another year and help make this organization even better and bigger than it is today. I thank you! (Applause.)

CHAIRMAN COHILL: Mr. Massey, I think it is time for you to say something.

MR. E. THOMAS MASSEY: Ladies and Gentlemen: I thank you for the confidence you have imposed in me, and I hope after this convention that we will all go home full of enthusiasm and inspiration that we have gathered at this meeting for a bigger and better Farm Bureau of the State of Maryland. I am a hundred per cent back of the organization. (Applause.)

CHAIRMAN COHILL: The Secretary has already been appointed by the Board according to the Constitution. I would like to add a little to this. I have been around this country of Maryland for several years, and I know Mr. Payne here, and I am sure that he is fully qualified for the work before him, and I am quite certain that he will live up to the work required of him.

I want to say to Mr. Davis and Mr. Stewart here, and Mr. Massey and the other officers of the Maryland Farm Bureau Federation, that when I left the job she was in debt, and they have pulled her out and now have a nice balance in the Treasury. The Farm Bureau Federation of Maryland is out of debt with a nice surplus. When I look back, as I was telling you, when I started out in Frederick County, for instance, out here in Mr. Cockey's district, there were five men who came to the meeting, and I think three of them came from Pennsylvania. And then look how we have gone forward in just these last few years! Why, what can't you men do now when you go back home, if each one of you in your own district will get one more man? You certainly ought to be able to do that.

I am going to hand the Chair back to Mr. Davis now, and that will close the meeting.

. . . . Cries of "Speech from Mr. Payne" . . .

REMARKS

BY F. M. PAYNE,

Baltimore, Md.

I came near getting by. I am not going to make a speech, but I might make a few remarks about what I have been doing. In fact, I don't believe you ought to include me in as a speechmaker as it has been said the ladies make better speeches than the men. I honestly don't feel that I should or can say a whole lot. I guess it is very good that I do not feel that way, because I don't know of any better chance in the world for a fellow to get in bad when a fellow starts out on a job and starts in talking. It is a whole lot better to do a little work first and then talk afterwards.

A few of my impressions which, of course, are very limited because the impressions are a result of this week's association, have to deal with and will carry me into a very interesting program of work for this year. I want to congratulate the old faces, the old members that have stood by the Maryland Farm Bureau. What a wonderful feeling of pride it must be to them now to know that at this time, greater than any other time in the history of your agriculture and your experience, when organization is going to count to you men and women who have stuck faithfully and supported organization, and to you alone will be given the credit of what is going to be accomplished through organization for agriculture.

A thought comes to mind that would lead you and help you to understand what I mean. Dr. Frank Crane going down the street one day when horses were used to pull heavy loads saw a horse leaning over drinking from a trough. The collar had come forward on the horse's neck, and Dr. Crane said, "Why man, that horse has got a sore shoulder."

"Yes, most of the horses that do the pulling in our stable have got sore shoulders," he said.

That is you men. You have been carrying this burden. Let us add to "There is no substitute for membership" one thought. You have carried it; we are going to continue to carry it, I hope. But go back and try to get your neighbor to help you. Go to him again if you have been there before, and go to one who should be with us.

I thank you!

. . . The meeting adjourned at twelve forty-five o'clock.

ADJOURNMENT.

REPORT

of the

Maryland State Horticultural Society

TUESDAY MORNING,
January 6, 1931

BALTIMORE, MARYLAND.

The First Session of the Thirty-third Annual Meeting of the Maryland State Horticultural Society, held in the Ball Room of the Hotel Lord Baltimore, Baltimore, Maryland, convened at ten-twenty o'clock, Albert Allen, President, presiding.

PRESIDENT ALBERT ALLEN: The meeting will come to order. The first thing on our program is the report of our Treasurer, Mr. G. Rust Canby.

REPORT

of the

SECRETARY-TREASURER G. RUST CANBY,

Silver Spring, Maryland.

Mr. President, Ladies and Gentlemen:

There is little occasion for me to recite the events of the past year, as it affected fruit growing, as all of us, as growers, have had our own experiences and problems.

I merely want to report a healthy condittion of our Society, and that possibly due to our fine programs and speakers, we have had so many calls for extra copies of the 1930 Proceedings of the Society that the supply is exhausted.

There seems little reason to use space in the Proceedings for a complete financial statement, as the books of the Society are open to inspection by members at all times. I wish to report a cash balance of $298.61 as of this date, and request that a committee be appointed to audit the books of the Society.

It was voted on motion made by Mr. Towson and seconded that the report be accepted.

PRESIDENT ALLEN: We will now have the report of the Assistant Secretary, Mr. A. F. Vierheller.

REPORT

of the

ASSISTANT SECRETARY A. F. VIERHELLER,

College Park, Maryland.

As assistant to Mr. G. Rust Canby, Secretary-Treasurer of this Society, it has been my duty to care for any secretarial work that could be conveniently handled at the offices of the University of Maryland, such duties including correspondence, memberships, arranging for meetings of the Society, issuing of the monthly News Letter and editing the annual report of the Society. It is a pleasure to know that arrangements have been made to exchange reports, news letters, etc., with practically all other Horticultural Societies of the United States, and it is believed that such exchanges will be of mutual benefit in bringing societies and growers more closely in contact.

At our meeting on January 8, 1930, a resolution was adopted by this Society instructing the Secretary to write each Maryland representative in Congress urging defeat of Senate Bill S-685 and House Bill H. R. 2154, dealing with the use of corn sugar in commercial fruit preserves without statement on the container label. The representatives pledged their support and the bill was not passed.

Our summer meeting and field day was an outstanding success. Mr. and Mrs. J. Walter Englar, of New Windsor, were our hosts. They spared nothing to add to the comfort and entertainment of their guests. The day's events included an orchard tour and orchard tillage machinery demonstration at Mt. Olivet and New Windsor Orchards, exhibits and demonstrations of fruit graders and cleaners at Mt. Olivet Packing House followed by a box luncheon, band concert and speaking on the beautiful campus of Blue Ridge College. Among the speakers on this occasion were Hon. Albert C. Ritchie, Governor of Maryland; Mr. R. R.

Pailthorpe, of the U. S. Bureau of Agricultural Economics, and Mr. Ralph Rees, of the Federal Farm Board. The sincere thanks of the Society are expressed to Mr. and Mrs. Englar, and to Governor Ritchie and Messrs. Pailthorpe and Rees for their efforts in making the day one of pleasure and profit.

The past season with its problems of drought, codling moth and spray residue, has taxed the resources and ingenuity of the fruit grower, and it has been my official duty to assist the growers or any of the other subject matter specialists of the University of Maryland or of the State Department of Health in the solution of some of their many problems.

I know that you will like the program and I want to thank our speakers for their excellent response to our invitation to appear before this Society.

PRESIDENT ALLEN: I think we are all very much indebted to Mr. Vierheller for his interest in this Society. The next on the program is the President's Annual Address.

PRESIDENT'S ANNUAL ADDRESS

ALBERT ALLEN, SALISBURY, MD.

Fellow Members, Ladies and Gentlemen:

It is with pleasure that I welcome you to this, the thirty-third Annual Meeting of the Maryland State Horticultural Society.

These meetings, with the information received each year from our speakers, as well as from conversation with other growers, are vitally important to every fruit grower in the State.

Each year new problems of production and marketing are presented and one who does not keep abreast of the times and meet these changed conditions as quickly and as efficiently as possible will soon be seriously handicapped or hopelessly lost.

During the present year the grades for apples were revised by the U. S. Bureau of Agricultural Economics after conferences with growers and shippers. These changes, with the greater number of grades under which we can pack our fruit, should be a benefit to the industry.

The embargoes placed upon lower grade apples from the United States by England as well as the partial embargo by the Argentine Republic have greatly influenced our marketing problem. Even with these restrictions, which were partly offset by the opening up of other Continental European Markets, it was the export market that really saved the day this year. We should all be keenly alive to this situation and offer only such fruit for export as will cause no desire on the part of other countries to place further embargoes.

The severe drought of this season brought with it many problems. It caused much dropping of fruit, it reduced the size and yield of what remained on the tree, it weakened the vitality of the trees and in certain sections caused many to die as well as the possible effect upon next year's crop on those trees apparently in fair condition.

The drought also brought with it spray residue which in many cases necessitated careful dry cleaning or washing. This problem is here and we must all face it. Our industry cannot afford to sidestep this issue.

The possibility of emergency irrigation, especially in connection with a stationary spray plant, is one upon which many of us would like to have further information.

To help our industry we must increase consumption of our fruit. To do this we must learn to produce more *good* fruit per acre, and do it more cheaply even in the face of new problems which present themselves each year. Apples or peaches well grown are half sold. More Number One fruit, produced more cheaply, with increased consumption and consequently better returns is the goal toward which we should strive. Our Horticultural Society should help us to this end as well as our officials at the University of Maryland, and in this connection I am glad to report that the New Horticultural building will probably be started soon.

I am glad to welcome fellow fruit growers from our neighboring states. Our problems are your problems and what any of us do individually reflects either credit or blame upon the industry. Let us all fight our battles together and meet better times half way.

PRESIDENT ALLEN: Our first speaker this morning is one whom we all recognize as an authority in his line. He is going to speak on "What Should We Do to the Soil and to the Tree to Produce Fruit of Good Size and Color?"

ADDRESS BY DR. JOHN R. MAGNESS,

PRINCIPAL POMOLOGIST, U. S. DEPARTMENT OF AGRICULTURE

Mr. President and Members of the Horticultural Society: I am afraid the subject assigned to me is a little bit ambitious. If I really covered that adequately all the rest of the speakers might as well go on home, because if you get good size and color, if I could and would discuss all the factors that give us good size and quality in yield, I think that would pretty nearly cover our problems. I am not going to be ambitious enough to try to cover the whole range of things that affect size and color of fruit, but rather confine my discussion quite largely to one of the most important factors affecting size and color, and that is the general question of soil moisture in relation to fruit production.

I think that there isn't a question that is more pertinent to the eastern fruit grower, not only this year, but every year than an understanding of the basic principles of soil moisture and the effect of different moisture supplies on the tree, because while we had an unprecedented drought situation this year which we hope will not be repeated for many years to come, still it is probable that there are relatively few years under eastern conditions when the trees do not suffer to a certain extent due to a shortage of available moisture. In the time that I have I want to discuss something of the behavior of moisture in the soil and the effects of different moisture supplies on the trees.

In discussing soil and moisture I will use certain terms that refer to various conditions of moisture within the tree| I want to mention two or three of those, because I think they are important in getting an understanding of the way the moisture in the soil behaves, and it is necessary to have an understanding of that if we are going to have an understanding of the way the tree takes it up, and particularly in such questions as the effect of varying moisture supplies, irrigation, etc.

When the soil is wet by rain or irrigation the amount of water that the tree takes up is determined by the nature of the soil itself. Some soils will hold only around ten per cent of their weight of water. The rest of it will drain on down through and wet the soil below or drain out. Other soils will hold up to 25 or 30 per cent of their weight of water. The main factor in determining the amount of water that any soil will hold is the texture or the fineness of the soil.

In general, our finer soils, our clay soils, or our loam clays will hold more water and the coarser the soil the less water it will hold per cubic foot of soil. The total amount of water that this soil will hold is termed the "field capacity" and that represents the total amount of water that that soil will hold against gravity. You can apply more, and it will simply run on through, or more may come as the result of rain and it will simply run on through. The field capacity represents the inherent water holding capacity of your soil.

Now, all of the water that the soil will hold is not available to the plant. The amount of water that the plant can obtain from the soil again appears to depend on the soil itself, and not on the plant. It is rather surprising when we think of it that practically all plants can take the same amount of water, or approximately the same amount of water from the soil. We have some plants that we term drought resistant, our desert vegetation. That is not drought resistant because it can get more water from the soil, but it is rather because the structures of the plant mean that it uses very little water. Practically all plants can take the same amount of water, that is, they can reduce the water in the soil to the same amount, and that point where the plant can obtain no more soil water is termed the "wilting coefficient" because it is the point at which the plant becomes permanently wilted. So that the amount of water then that our soil can hold is the amount in between this so-called field capacity and the wilting coefficient.

Now, if we have a coarse, sandy soil our field capacity will be around 10 per cent and our wilting coefficient around 2 per cent. In other words, the total amount of water that that soil will hold, which is available to the plant, will be around 8 per cent of its weight, or that would run perhaps less than an inch per foot, perhaps three-quarters of an inch per foot depth in our soil.

On the other hand, with a good silt loam soil you probably would have a water holding capacity of 20 per cent and a wilting coefficient of perhaps around 6 per cent, so that instead of 8 per cent you would have a total water holding capacity there of 14 per cent. In other words, that soil per cubic foot will actually hold that much more water which is available to the plant. So in the first place our rather fine textured soils are the ones which store up the greatest amount of water available to the plant.

One very important factor in the amount of water the soil will hold is the organic matter content. The organic matter itself will hold many times its weight of water. We don't have exact figures on what that is, but if you have a soil that runs one per cent organic matter the presence of that organic matter itself will materially increase the water holding capacity of that soil. I think that every one who studied the orchards this summer was impressed with the fact that the orchard soils which had been so handled for years past that the organic matter content was high, held up, that is, the trees held up markedly better than in orchards where the organic matter had been depleted.

Another factor, of course, that is readily apparent in the water holding capacity of the soil is simply the volume of the soil that is available per tree. That means both depth and area. In other words, within limits, the farther apart your trees are planted the more water capacity per tree, the more cubic feet of water or gallons of water or whatever unit you want to use that will be available per tree simply because you have there a greater storage reservoir. In addition to that, of course, the deeper the soil the greater the water holding capacity, because you increase the volume and you have more cubic feet from which water can be withdrawn.

Now, of particular importance in connection with the water relations in an orchard is the way the water is taken out of the soil. Under eastern growing conditions and under natural rainfall conditions we do not have an even distribution of roots in the soil. I think that is familiar to all of you who have studied the root distribution at all in your orchards. In general, we have our greatest concentration of roots in the upper soil layers. In some orchards that we examined in western Maryland this year we were surprised to find apparently the great majority of the roots in the surface six inches, that is, of the fine feeder roots. A lot of roots penetrated down, of course, but we had in that surface six inches a perfect network of fine feeder roots. That was a sod orchard, had been in sod for a number of years and the roots had developed there apparently in the surface where under the influence of summer rains there was frequent moisture, more moisture than there was lower down. Also, of course, there was more organic matter in that surface soil and without cultivation to destroy the roots in that particular soil in the surface, I should say, the trees had developed a perfect network of roots in that surface six inches of soil.

Now, also, the greatest concentration of roots was in under the spread of the branches of the tree, and as we went farther out the root population became more and more dispersed. In other words, we got fewer and fewer roots in a cubic foot of soil the farther we went out from the trunk of the tree and the deeper we went down in the soil.

Now, I want to emphasize that there were roots all through that soil; some roots all the way across the space between the trees. But the greatest concentration of roots by far was close in to the trees and in the surface soil. Now, that is a very important point, I think, from the standpoint of the water withdrawn from the soil, because all of the recent investigations indicate that the moisture is withdrawn not uniformly through the whole root zone, but in proportion to the root population. In other words, if you have a zone of soil here that is very thickly populated with roots you may have a rain that will wet that soil uniformly, we will say, down to a depth of two or three feet. We didn't have many of those last summer, but we get them once in a while. The soil will fill up its water holding capacity and then the rate that that water comes up out is proportionate to the root concentration. In other words, where you have your greatest mass of roots it dries out first. Consequently, under the conditions in this particular orchard that we were studying, we would expect that the soil close in to the trunk of the tree and in the upper zones would dry out and that all of the available moisture, all the moisture available to the growth of the tree would be pulled out of that soil while there was still a good deal of moisture in the soil farther out from the trunk and deeper down.

In other words, part of our soil would be so reduced in moisture that roots in that zone could not take up moisture, while the remainder of the soil was still supplying moisture to the roots.

It has also been shown recently that when a part of the root zone dries out, until no more moisture is available, that the other roots where moisture is available do not take up moisture more rapidly. In other words, if 50 per cent of your roots are in soil that is so dry that they take up no more moisture than the other 50 per cent do not take up moisture more rapidly, but rather the tree gets along with 50 per cent less moisture. I hope I make that point clear, because we feel that it is very important in studying the effects of different moisture conditions on the tree.

Perhaps that is a fortunate thing from the standpoint of saving the life of the orchard, because if the tree was able to take up moisture at a uniform rate until every bit of the soil was dried out, then we would have the tree going along normally until it reached that point, and suddenly no more water would be available and the tree would die. But due to the fact that a few roots reach far out and very deep down and are able to pick up just a little bit of moisture for a long time, even after most of the soil zone has dried down; that fact means that the tree gets enough moisture to live long after the soil is so dry that it isn't getting enough to function and to develop fruit, etc., normally.

Now, then, the important question is, what happens in the tree when we began to cut down on this moisture supply? I might say that so long as the whole root zone has moisture available, apparently the tree functions 100 per cent. Whether it is wet or whether it is partially dry seems to make relatively little difference in the rate the tree can take up moisture so long as all of the root zone is about wilting coefficient. When part of the root zone comes down in your sandy soil to this 2 per cent, or in your loam soil to this 6 per cent, so that part of your roots are not active in absorbing moisture, then what happens in your tree?

To discuss that I think it is necessary to go back and discuss briefly again the question of leaf function. We have discussed a number of times, I think, before perhaps, the question of the function of leaves, and the fact that the materials which go to build the fruit and build the wood are very largely formed in the leaves, and that a certain rather large leaf area is necessary to develop fruit and to develop wood and wood growth and produce a normal heavy crop.

In the leaves, as you know, the carbon dioxide from the air comes in contact with water brought up from the soil and forms the sugars and starches and other materials that go to build the fruit and go to build the wood.

The structure of the leaf very briefly is this—that on the under side we have literally tens of thousands of small pores termed stomata which stand open through most of the day through which the carbon dioxide passes in to the leaf. These pores are elliptically shaped structures in the case of the apple, with other cells having the ability to open or close. They are closed down during the night, but as soon as the sun strikes the tree in the morning they open up, if plenty of moisture is available.

When they stand open there is a free passage of carbon dioxide from the air into the leaf through these little pores. These pores stand open in the apple apparently until a shortage of moisture develops in the leaf, and when there is the least bit of wilting in the leaf, even before there is any visible wilting, but when there is just a little bit of water withdrawn there, these pores close down and instead of being open like that, if you look at them under a high powered microscope you simply see a streak across there. They are flatly closed down.

That conserves moisture when they are tightly closed, because when they stand open not only the carbon dioxide passes in, but the water vapor passes out. But it also very largely stops the entrance of carbon dioxide and consequently your leaf stops work. So that we really have an exchange of water in the tree for the carbon dioxide which represents the building of sugars and starches, etc.

Now, what did we get under drought conditions in Maryland last summer? In the tests we were carrying on in the western part of the state we found this: We were irrigating certain tracts, giving them all the moisture they needed and we were letting other tracts go under the natural moisture conditions. We found that the length of time that these stomata remained open in the leaf ran along just about the same until about the end of June. You will remember there were some fairly good rains through June. But beginning about the first of July in the non-irrigated plots, these stomata began to close down earlier and earlier each day, until about the middle of July they stopped opening entirely. The ground by that time was almost completely dried out, at least in the upper two feet where we could get soil moisture determinations, although deeper down the roots unquestionably were getting some moisture. But these stomata stopped opening there about the middle of July and stayed closed down completely until a rain which came about the middle of August. And during that time there was practically no growth in the fruit on these trees.

We were measuring the fruit every three days and there was practically no growth during that period; apparently the water supply was so short that these stomata closed down, the leaves were not working and we were getting much the same conditions in the trees for that period at least that we would get if they were defoliated.

In the meantime, the plots that had been supplied with water were standing with the stomata wide open until about noon every day, even under the extremely hot and dry weather of last July and August. Under conditions of excessive evaporation the stomata were closed down even if we furnished plenty of water, usually around noon, apparently because the roots and trunk do not pick up the water and carry it to the leaves quite rapidly enough to keep them from closing down. On the other hand, when we had a cloudy day, an overcast day, or a few little showers, anything that cut down the evaporation from the leaves, then they would stay open all day long. But apparently, it took practically the whole soil with water available if we were going to have these stomata staying open the maximum time, and apparently it is necessary that they stay open the maximum time if the fruit is going to develop most rapidly. In other words, if it is going to grow most rapidly, and if it is going to color up the best, it apparently is necessary to keep the leaves working and to keep the leaves working we have to keep the maximum moisture available.

Now, apparently, this is the basic factor in the relationship between water supply and the functioning of the trees, growth of fruit, etc. Now, the question comes, how do various orchard operations affect the water supply? I am only going to touch on that briefly. The first consideration is, of course, the soil type, depth of soil, etc. If you have an orchard already established there is nothing you can do about that. If you are considering the establishment of an orchard you, of course, realize that the deeper your soil, within limits, the finer the texture, that we need; soil that is coarse enough to give us good drainage so we won't have water logging, but a sandy loam or a silt loam rather than a coarse sand will give us greater water holding capacity. The depth of the soil and the depth of the effective root area are very important. As we mentioned a little while ago, organic matter is an extremely important factor in the determining of the water holding capacity of the soil. We won't go any further with that.

Every plant that grows in the orchard is taking moisture from the soil, and from that point of view, cultivation to keep down the growth in the orchard is an effective method of conserving moisture. On the other hand, it is some times harder to build up the organic matter under those conditions and frequently it is a question of choosing between the two, that is, whether you want to keep your soil cultivated and conserve the moisture, all of the moisture that falls on it, or whether you want to keep a crop growing there at least for part of the season, realizing that you are using up some moisture, but sacrificing moisture to build up organic matter. For the immediate season the crop growing there will hurt you the worst, but over a ten year period it is absolutely necessary to have your organic matter content built up.

In one test last year where we had a straw mulch on the orchard, it was very apparent that the straw mulch which kept down growth and at the same time perhaps cut down evaporation from the soil to a certain extent, materially benefitted the trees from the standpoint of increasing their water holding capacity or their water supply. In that block of trees, while they suffered greatly from the drought, the trees under mulch did develop their fruit definitely better than the trees not under mulch, growing adjacent to them.

Now, the real method, of course, where it is possible to control this water situation is through application of water. In many cases under eastern orchard conditions that is not possible. We can't tell from the information we have at the present time under what conditions it is to be recommended. Every orchardist will have to think through that problem for himself. But we can say this, that only through keeping this moisture supply up can we keep the tree functioning 100 per cent throughout the growing season. After experience in the Pacific northwest with orchards under irrigation, and after the results that we had under irrigation here this summer, I am more than ever convinced that control of moisture is one of the greatest factors of difference between the fruit production in the northwest and the fruit production under eastern conditions. There isn't any question but what, if we had control of the moisture under our orchards back here, we could greatly improve both the size and the quality of the fruit. We could keep the fruit growing at a uniform rate through the season. We could keep it growing at a maximum rate, and on the basis of the experience so far, if we could do that, and if we could keep those leaves functioning 100 per cent, we would develop the highest color and finish in the fruit.

Where control of water isn't possible, the only thing we can do is to handle our soils, handle our orchards, so as to conserve the water that nature gives us. But the absolute correlation that we have between moisture supply and the way the fruit developed certainly emphasizes the tremendous importance of that factor.

I might say just a word further in connection with the effects of the dry conditions on the fruit conditions in the tree aside from the development of the fruit. We had this year under the conditions in these tests about the same terminal growth on the tree plots that were dry and on the irrigated plots. The reason for that, of course, was that the terminal growth was largely completed before the orchard became really dry. But we did not get the thickening up of the buds and the twigs under the dry conditions, again apparently because the leaves were not functioning. The twigs, if you took a terminal eight inches long off the dry plots and off the irrigated plots were 50 per cent bigger around off the irrigated plots, and that difference in size is due to almost entirely wood growth in there. In other words, if we look at the twigs in cross section on our irrigated plots and our dry plots, we have this pithy structure inside just about the same size. Then we have the wood outside of that twice as thick on the irrigated plots as on the dry plots. Then the bark outside of that is a little bit thicker on the irrigated plots.

We have even a greater relative difference in size of buds. In other words, the fact that those leaves last summer simply stopped work for a couple of months and we think that is exactly what happened, has meant that the fruit stopped growth, that the buds stopped growth, the twigs stopped thickening up and consequently, we have a condition in the orchards quite similar to what we would get if we had a defoliation or partial defoliation for such a period.

PRESIDENT ALLEN: Are there any questions?

MR. GOLD MILLER: A great many people are thinking of the prospects of the bloom for another year. Will those small twigs develop, and what effect will this have on next year's crops?

DR. MAGNESS: I think unquestionably your blossoms are going to be smaller and weaker. I believe the fruit spurs are formed in most cases at least in the orchards that we have examined. But rather than having five or six large blossoms per cluster I anticipate that you are going to have three or four small blossoms per cluster. They are going to be very much weaker than normal. Whether they will set or not will depend largely on conditions in the spring. Under very favorable conditions I believe there is a good chance for a normal set of fruit, but under unfavorable conditions they will be very definitely weak blossoms, and it will be more of a fight, I think, from every standpoint to get a good set in the orchard. Cross pollination on varieties like York, which are normally self fruitful, will perhaps be desirable next spring, for when blossoms are weak cross pollination helps to make them set. Also, frosts are probably going to hit them a little bit more than normal if we have frosts or if we have unfavorable pollination conditions. In that connection, probably anything we can do to stimulate them to a little better start in the spring will be helpful.

MR. TOWSON: Will nitrate of soda help any?

DR. MAGNESS: Undoubtedly it will help, and certainly, the program ought to be to continue nitrate applications and perhaps even step them up a little bit, particularly if your trees have not been getting too much anyway. Our experimental work was entirely on apples this year. I believe the same basic principles that we have discussed in connection with apples would apply with peaches. I see no reason why it wouldn't.

MR. TOWSON: The formation of buds is different at different times, isn't it?

DR. MAGNESS: Yes, that is true. The formation of your buds—well, the time isn't so much different, but they are more or less different structures, and they are a little bit later in the peaches. I haven't examined peach trees to see the condition of the buds.

MR. J. WALTER ENGLAR: I was wondering about the method of irrigation, how you got the water to those trees and how much you aim to apply to the trees each day.

DR. MAGNESS: In this particular work, with these trees, these were small plots and the water was pumped up through the stationary spray system and we used the sprinkler system of application. We unquestionably applied more water than we needed on the irrigated plots because we were not studying to see how little water we could get along with, but we were studying rather the effect; we wanted to be sure we had plenty of water on our wet plots all the time, because we were studying these basic physiological differences. We put on about six inches a month on those plots.

I might say in that connection that if you were depending completely on irrigation, that is, if you were discounting the possibilities of rainfall entirely, you would want to plan on four to six acre inches per month of water under dry conditions. That is a little hard to estimate, because as I mentioned here, when the evaporation conditions are low, when you have showery weather, cloudy weather, then the tree uses very much less water than it does under the conditions we had this year.

MR. GEORGE HARRISON, JR.: On the straw mulch plots did you have any trouble?

DR. MAGNESS: Well, that mulch was put on just this spring and it was not piled right up against the trees, and we saw no mice and no evidence of mouse injury. That is a thing that you have to consider in mulch operations.

MR. SAUTER: Could we have that question answered by somebody before we get away from it? It is likely to absorb some moisture from the peaches. I would like to know what those conditions are.

DR. MAGNESS: Possibly Dr. Auchter or Dr. Schrader have examined peach buds.

DR. SCHRADER: I have seen several peach orchards in good condition. Mr. Vierheller has been around the state recently and he says they are in pretty fair condition.

DR. MAGNESS: I should emphasize this, I believe, that on these irrigated plots of apples our thickening was much more than is normal for this section. I have heard many fruit men say that the growth conditions in the Pacific northwest are different from what they are in the eastern orchards, that the buds and twigs are plumper. Now, we got just exactly that condition under irrigation here this summer. So while I think the growth is more slender and the buds are smaller than normal in the orchards, there probably isn't the difference from the normal that we got between our irrigated plots, because our irrigated plots certainly showed more thickening and more growth of buds, etc., than is normal in the orchards in Maryland.

DR. SCHRADER: Our peach buds seem to be fewer this year per twig than they have been in the past; there are more single buds than double buds.

DR. MAGNESS: We know that under normal conditions fruit bud differentiation starts in late June or early July right toward the end of June. We don't know exactly how long it continues. Most of the work is to find out when it starts. I believe there is a considerable period through there, perhaps through July and August when you may have some differentiation taking place, at least in certain varieties. The buds don't all start, don't all change over at just exactly the same time. Under normal conditions unquestionably most of that fruit bud formation or the start of the change takes place during July. But at least with certain varieties I believe that some of it continues a good deal later in the summer than we have thought. For instance, in one Jonathan orchard this year we had water applied in August, and I was convinced that fruit bud formation took place after that, way along to the first of September. We have some work under way that will show it, but where you have had a check of growth like that and then water is supplied by irrigation, I believe that in our plots it started those buds again and they changed over to fruit buds even after that, but we are not sure of that.

MR. TOWSON: In the early part of the season would thinning help that differentiation?

DR. MAGNESS: Actual thinning experiments in trees that are in biennual bearing have usually not caused those trees to form fruit buds for the next year. On the other hand, a tree that is bearing some every year is certainly, I think, helped to stay in regular bearing condition by a systematic thinning program.

MR. LEE ALLEN: Shall we apply nitrate at the same time this year as usual?

DR. MAGNESS: It is particularly important this year to get it on early enough. We want to be absolutely certain this year that it is on there, and I would put it on just as soon as the frost is out of the ground.

MR. MILLER: Do you advocate the late application of nitrate as helping the differentiation from that time on?

DR. MAGNESS: I don't believe I can answer that question. Theoretically, it wouldn't. I don't know whether Dr. Auchter has any idea on that or not.

DR. AUCHTER: We don't know. I think it would help somewhat the condition of the orchard. In a very well cared for orchard as regards fertilization, cover cropping, trimming and soil management, an application along in June, I think, helps form the fruit, but if this orchard is rather low in vigor and had not received the best care, you are just starting in to get in into condition, I think in that case that an application of nitrogen would probably help the differentiation of fruit buds, but it would depend upon the condition of the orchard, and in the last analysis, we don't know.

PRESIDENT ALLEN: I have one question. I understood Dr. Magness to say he thought control of moisture supply was the main difference between the eastern and western apple production, and that control of moisture was necessary to develop the best quality and color. We have always considered that we grew better apples, better quality than those grown out west.

DR. MAGNESS: That would probably depend on what you mean by quality. In using the term "quality" I was thinking of color and size rather than flavor. There isn't any question but what in most seasons we do improve color and size by having more moisture available than we frequently have here. That has been particularly true in experiments for the past two years. Both color and size have been greatly improved by the addition of moisture or by irrigation to supply moisture when it was deficient. As far as flavor is concerned, I think that there are so many factors that may enter in there that it is really better to keep away from it.

MR. WALKER: How heavy was your straw mulch?

DR. MAGNESS: About eight inches of straw left with five or six foot open spaces right around the trees, and then again through the centers. The idea of leaving that was mainly on account of fire hazard.

MR. GOLD MILLER: I would like to know the relative cost of putting humus in the soil as contrasted to getting moisture with irrigation. We have a pipe line system and we used that for some irrigation. We found that it greatly improved the color and the size wherever we gave the trees a good supply of water, but it costs too much. We came to the conclusion that the best thing we could do was to try to work the humus into the soil. It is more practical, it is cheaper than irrigation, and the main thing is to get the water to the trees. I want to know how far we ought to think about irrigation.

DR. MAGNESS: I would say that would depend on the individual conditions and the cost of water, etc. Irrigation will not take the place of organic matter, because you have a nutrient requirement in your organic matter that is necessary. It is more vital, or just as vital to have organic matter with irrigation as it is without irrigation. The growers of the northwest found that out, and we wouldn't have much of an apple industry out there today if they hadn't started in on the soil management system, and that meant the building up of organic matter.

MR. GOLD MILLER: Do they use organic matter out there with their irrigation?

DR. MAGNESS: Yes, they grow very largely alfalfa in the orchards, which is all worked into the soil, and with their irrigation they can grow several tons per year per acre which goes back into the soil. That has been a very vital factor. If we had irrigation we would not have to worry so much about the competition of the crop and the trees for the water that is so valuable. If water isn't available, organic matter certainly will help. On the other hand, if water can be obtained at a reasonable cost and particularly if your soil is not too retentive of moisture, or if you do not have a large moisture reservoir there, irrigation will help solve a lot of orchard problems.

PRESIDENT ALLEN: I am sure we are all very much indebted to Dr. Magness.

He has mentioned that next spring would be a good time to do everything we can to help get this fruit to set both by applying fertilizer early and being sure of your cross pollination and your bees, etc. Professor H. D. Hootman, Horticultural Specialist, Michigan Agricultural College, has kindly consented to speak to us on this subject. He has had considerable experience along this line. Professor Hootman's subject is "Recent Discoveries in Pollination Methods and Practices and Their Influence Upon Greater Yields of Desirable Fruit." Professor Hootman.

RECENT DISCOVERIES IN POLLINATION METHODS AND PRACTICES AND THEIR INFLUENCE UPON GREATER YIELDS OF DESIRABLE FRUIT

BY H. D. HOOTMAN,

Secretary, Michigan State Horticultural Society.

I bring you greetings from the Michigan State Horticultural Society. It is indeed a pleasure for me to be here and have this opportunity to address you.

It is impossible to over-estimate the importance of a knowledge of the pollination of fruit bloom. Without this knowledge the selection of varieties for planting and their arrangement in the orchard cannot be intelligently practiced. The cultivation of self-sterile varieties must constantly be attended by disappointment and loss when provision has not been made for cross-pollination to take place.

In the time allotted me I want to show you some pictures and tell you of some of the interesting things I have had an opportunity to see in some Michigan orchards during the past two or three years.

Many fruit growers have entertained a hazy impression that pollen is carried from one blossom to another or from one part of an orchard to another by the wind. This is not the case. Fruit pollen is moist. It is seldom, if ever, blown about by wind. Pollen transfer is carried on mainly by insects, especially honey bees.

Last spring a Michigan fruit grower said to me, "I never see any bees in my orchard and I always have apples." He would not be convinced that insects were responsible for the transfer of pollen until he had erected at his own expense an 18-foot cage around one of the McIntosh trees in his orchard. This cage was covered with muslin during the blossoming period to exclude all insects. He anxiously waited until the muslin could be removed to note the results. Just eight apples "set" upon the tree within the cage; while other trees of equal size in the same row harvested from 12 to 15 bushels per tree. This grower now realizes the importance of bees and has already provided for 50 colonies to be placed in his orchard next spring.

Requirements for Fruit Setting

In order to have a blossom develop into a fruit it is necessary that pollen come in contact with the sticky stigma. Here it germinates and grows down the pollen tube until it reaches and fuses with the ovary of the blossom which becomes fertilized. The young fruits when first formed have but a slight hold upon life. Unfavorable influences, no matter how slight, may cause them to perish. Fertilization gives the tiny fruit life and enables it to hold upon the parent plant through nourishment drawn to supply the developing embroyo in the seeds. Thus complete fertilization of the blossoms usually betters the chances of the fruit sticking on the spur and developing instead of falling to the ground during the "June Drop." When blossom fertilization takes place only on one side, with the accompanying development of seeds, a misshaped fruit often results.

Some varieties of fruit do not "set" well when pollinated with their own pollen. These varieties are termed "self-sterile." In such cases pollen of other varieties must be available so that cross-pollination can take place if profitable crops are to be harvested. There are other varieties that set fairly well when pollinated with their own pollen. Such varieties are "self-fertile." However, it has been observed that even self-fertile varieties produce better crops when interplanting is practiced.

Insects Excluded

In the spring of 1927 a wire screen cage was built around a Montmorency cherry tree in the Michigan State College orchard at East Lansing, to exclude all insects during the blossoming season. A severe freeze during April injured many of the cherry buds so that their development into fruit was impossible.

One warm sunny day during blossoming a man entered the cage and with a small brush pollinated the live blossoms on a single large limb—doing the work of the bee—distributing the pollen from the stamens to the sticky stigma. Forty-nine per cent of the live blossoms on the hand pollinated limb set fruit, while the balance of the blossoms on the tree, subject only to wind pollinations, set four per cent of their live blossoms.

The growth and development of the sour cherry industry is one of the revelations of Michigan horticulture. This growth is indicated by the number of Dunkley cherry pitters used to pit the crop. In 1917 just 11 pitters were used in contrast with 1928 when 119 were worked day and night.

The sour cherry also appears to be a good honey plant. Honey bees have shown an inclination to work cherry blossoms in preference to apples. Although the Montmorency sour cherry is considered self-fertile—or capable of produc- own stamens—it has been demonstrated that sour cherry yields can be measurably increased by distributing colonies of bees through cherry orchards during the blossoming season.

Wind and Insect Pollination Compared

In 1928 several individual sour cherry trees in widely separated locations were screened during the blossoming season to exclude all insects.

The results of all these tests recorded in the following table have indicated clearly the desirability of insect pollination.

Location of Tree	Wind Pollination	Insect Pollination
Grand Rapids	2¼ pounds	44 pounds
Hart	4 pounds	44 pounds
Traverse City	3½ pounds	150-200 pounds

Honey Bees Increase Cherry Yields

Friday Brothers, located near Coloma, Michigan, encouraged by their satisfactory experience with bees in a Hale peach orchard in 1927, decided to use bees in all their orchards in 1928. The trees in their cherry orchard are of mature size. The largest crop produced previous to the season of 1928 was 120 tons. The 1928 crop totaled 188 tons. In commenting upon the increased yield Mr. Friday stated that while a part of the increased tonnage was probably due to the increased size of the trees, he credited 50 of the additional 68 tons to the bees.

In the W. R. Roach Company orchards, located north of Hart, Michigan, 200 colonies of bees were distributed in 150 acres of apple and cherry orchards. Where the trees were very large as many as three colonies were distributed on a single acre. In blocks where the trees were seven or eight years of age only one colony to three or four acres of orchard were used. The colonies remained in the orchard eleven days. Weather conditions during this period were favorable for bees to work and in this limited time three tons of honey were gathered. Further, the cherry crop from these orchards totaled 265 tons.

It has long been known that flowers secrete nectar for the sake of attracting insects, but it is doubtful if the real value of the sour cherry as a honey plant has been appreciated by bee keepers. Sour cherries are generally not sprayed until after blossoming. This makes it possible for bee keepers to rent their colonies in concentrated cherry sections, gather the nectar flow available and at the close of the blossoming period move their colonies to other honey producing sections—thus eliminating the hazard of arsenical poisoning to the bees.

Uses Bees in Peach Orchard

Friday Brothers at Coloma, Michigan, planted ten acres to J. H. Hale peaches in 1917. At that time it was not known that the J. H. Hale was a self-sterile variety. Year after year the trees produced only a few scattered peaches and many "buttons" (small peaches with undeveloped pits). As trees died out here and there through the orchard cross pollination was provided by replacing them with trees of Elberta or South Haven. In walking through this orchard in September of 1926 one of the owners made the remark that the total yield from the entire block would probably not be over 10 bushels. It was easy to agree with him as I was having difficulty in locating a single peach to eat. It should be remembered that this orchard is favorably located on a good orchard soil and that the Michigan peach crop that year was the largest it has been since 1916. The following year at blossoming time insect activity was greatly increased in the Friday orchards by locating 20 colonies of bees in them. The set of fruit in the apple and cherry orchards was materially increased. The first time in its history the J. H. Hale block came through with a crop. Because of their age and neglect the trees were not in the best state of vigor to produce peaches of large size. However, they were readily sold on the Benton Harbor market and netted well over a thousand dollars.

In an orchard near Grand Rapids, H. M. Peck has 220 J. H. Hale peach trees standing together. This little block of trees has been particularly regular in producing crops of "buttons" and few peaches; 150 bushels being the largest crop. Last spring bees were placed near South Haven and Banner peach trees at the edge of the Hale block. It was noticed that the bees worked the Banner blossoms in preference to several other varieties. Because of this apparent preference, branches of this variety were used in all "bouquets" in the orchard. At harvest time diligent search had to be made to find a single "button" and over 800 bushels of Hale were gathered.

Change in Apple Planting Practices

A big change has taken place in commercial fruit growing since our forefathers set out orchards to assure a supply of apples for the family's needs. These old home orchards were generally never more than two to four acres in extent and on this comparatively small area were planted a dozen different varieties, but seldom more than ten or twelve trees of one kind. Under these conditions of orcharding a pollination problem was unknown. In recent years fruit growing has become commercialized. The selection of varieties for planting has been largely determined by the market demand.

As a result it is not uncommon to find an orchard of 10, 20 and even sometimes as large as 60 acres that has been planted to a single variety such as McIntosh, Stayman Winesap, R. I. Greening or Northern Spy, without considering the pollination question. Provision for cross-pollination should be made at the time an orchard is set out, by planting not more than four rows of a single variety together.

Making a Stubborn Orchard Bear

Several years ago there came to my attention a Northern Spy orchard located near Belding, Michigan. O. W. Braman, its owner, informed me that the yield from the 11 acres set solid to Spies had never been over 1,000 or 1,500 bushels any season during the past eight years. Practically all apples had been harvested from the north side of the block where an old home orchard of mixed varieties stood close by.

In 1925 it was thought that lack of insect activity was responsible for the unproductiveness of the south half of the orchard. A yard of 40 colonies of bees was established in the orchard but this did not materially increase yields. In 1927 "bouquets" of Ben Davis, Wagener, Roxbury Russet and Tolman Sweet blossoms were placed in tubs of water in the bee yard. About 40 more half barrel tubs were filled with "bouquets" and scattered through the south side of the orchard. Bucket "bouquets" were hung in the trees. Six additional colonies of bees were moved into the orchard for the blossoming period and substantial "bouquets" placed about 10 feet in front of them. What were the results? "Bouquets" plus bees did the trick. A 5,200 bushel crop was harvested.

Ill Feeling Between Neighbors

The writer was once asked to visit a Northern Spy orchard in central Michigan where it was suspected that a pollination problem existed. In driving by the orchard it appeared as if a good crop was on the trees. Closer examination revealed that only the trees in the outside row around the orchard and for several rows on the north side where Jonathans, Grimes and Baldwins joined them were bearing satisfactorily. It was apparently a pollination problem for the whole orchard had bloomed profusely. The crop on the outside row of trees was probably pollinated by bees or wild insects carrying pollen to the orchard from orchards in the vicinity.

I recalled that while visiting a bee keeper's yard in this same neighborhood several months earlier, I had heard this particular fruit growers pedigree read in no uncertain terms for spraying when the trees were in bloom. In truth the fruit grower was quoted as not caring if there wasn't a bee within twenty miles of him. Here were two neighbors, a bee keeper and a fruit grower—at swords points with each other, instead of working harmoniously together.

A change has taken place in the attitude of these two men because of a better understanding of each other's problems. This year at blossom time, spraying operations ceased, and for a cash consideration the bee keeper distributed a truck load of his bees in the fruit grower's orchard. Tubs of water were placed in front of the colonies and kept filled with fresh bouquets of apple varieties that are known to effectively pollinate the Northern Spy. All this effort was not in vain for the crop this year of 4,400 bushels was the largest it had been in fifteen years. A good crop of apples was produced on all trees that blossomed in the orchard instead of as formerly—on the outside row and on trees located near the Jonathans, Grimes and Baldwins.

In the W. R. Roach Company orchards, located near Hart, a twenty acre solid block of McIntosh was located in 1927 that had been consistently producing unusually light crops for an orchard 22 years of age that was so well cared for. The crop that year was only 700 bushels (an average of a trifle more than a bushel per tree), but crops in previous years had been as high as 1,600 bushels. It seemed that the orchard should produce considerable more if its blossoms were properly pollinated.

Arrangements were made with C. J. Freeman, a bee keeper 80 miles away, to furnish 200 colonies of bees to be distributed in the Roach orchards for the blossoming period. On the morning of May 18, four truck loads of bees were distributed in 150 acres of apples and cherries to utilize for pollination purposes any flights that were made. Conditions for handling and moving the bees must have been ideal for this operation was completed without a single man getting stung.

Blasted Hopes Bright Again

At the close of the apple blossom season it appeared that the attempt to set a crop in the McIntosh block had been a failure. It was impossible to secure sufficient bouquet material to keep the buckets located throughout the orchard supplied with fresh branches. The bees had shown a marked preference for the cherry blossoms and worked them to the exclusion of the apple as long as cherry bloom was available.

In midsummer it was estimated that the crop would compare favorably with the largest formerly produced of 1,600 bushels. As the season advanced red apples seemed to appear well distributed through many trees where they had been unnoticed earlier. It was apparent that previous estimates had been too low. Some individual trees picked over twenty bushels and a total of 4,000 bushels were harvested.

Screened a McIntosh Tree

The owners of the orchard had screened to exclude all insects a single McIntosh tree to determine what was being accomplished by the bees. At harvest time the screened McIntosh tree picked 25 apples while its nearest neighbor 40 feet away, where provision with bouquets had been made for cross-pollination to take place, picked over 1,200.

Pollination in a Delicious Orchard

Near Bloomingdale, Michigan, is located the 90 acre apple orchard of Gilbert Landers. The Delicious has been planted exclusively as the permanent variety in this orchard. Peaches had been used as filler trees in a well located portion of the orchard. Jonathan, Wealthy, Duchess and Liveland Raspberry were planted as fillers in other blocks.

In looking over the orchard in the summer of 1926 V. R. Gardner, Director of the Michigan Experiment Station, observed that the Delicious trees in the blocks where apples were used as fillers were producing considerably more apples than were the Delicious trees where peaches had been planted. Further, in the block where Duchess were planted the Delicious tree did not appear to be as well loaded as in the blocks where Jonathan, Wealthy and Liveland Raspberry stood.

To check up on the merits of these different varieties as pollenizers for the Delicious under orchard conditions, spur counts were made to determine the percentage of blossoming spurs that set fruit. Over three thousand spurs were observed and counted on the Delicious trees in the various blocks, both in 1926 and 1927.

The following table indicates the results:

	1926	1927
Delicious x Self	23%	29%
Delicious x Liveland Raspberry	47%	50%
Delicious x Duchess	36%	40%
Delicious x Jonathan	48%	52%
Delicious x Wealthy	43%	45%

Bartlett and Seckel Inter-Sterile

In 1920 I planted a small orchard of 100 Bartlett and 20 Seckel pear trees at the Graham Horticultural Experiment Station, near Grand Rapids, Michigan. Some six years later, it was learned, as a result of pear pollination experiments, that these two varieties that have been so generally planted together are *inter-sterile,* or unable to effectively pollinate each other. The following year the 20 Seckel trees were grafted to either Bosc or Conference—two varieties that have proved to be good pollenizers for the Barlett.

It should be remembered that while this orchard is still young most of the Bartlett trees have blossomed regularly since 1924. Few blossoms "set" and developed into pears. As the trees increased in size there was a slight increase in the number of pears gathered, the largest crop of seven bushels being produced in 1927. The following year it was decided to see what could be accomplished by locating several colonies of bees in the orchard and using bouquets of Howell and Kieffer blossoms to supply pollen for cross-pollination. We were rewarded with a nice crop of 150 bushels of choice Bartlett pears from this young orchard. After another year, bouquets will not be required to "set" a crop in this orchard as enough grafts of Bosc and Conference will probably be blossoming to supply the pollen necessary for a satisfactory crop.

Probably not over three rows of a single variety of pear should be planted together. The following pollenizers should prove to be most satisfactory for the varieties indicated:

For Bartlett: Bosc, Howell, Flemish Beauty.
For Bosc: Bartlett, Flemish Beauty, Howell.
For Seckel: Bosc, Howell, Flemish Beauty.
For Howell: Seckel, Bartlett.
For Clapp's Favorite: Howell.
For Kieffer: Howell, Flemish Beauty, Seckel.
For Flemish Beauty: (Self-fertile) Bartlett, Howell.

To the average fruit grower there are two ways to secure bees to pollinate fruit bloom. Many practical orchard men hire bees for the blossoming period, the usual price to the bee keeper being $2.50 to $3.00 per colony. Where an orchard is located in a good honey producing section, arrangements can often be made with a bee keeper to establish an apiary in or near the orchard for a nominal sum. The other alternative is to engage in the bee keeping business. To succeed with bees a man must have a special aptitude for the work. Most fruit growers at heart are not bee keepers. In numerous cases where the ordinary orchardist has attempted to keep bees, the colonies dwindle down until in two or three years they do not have any bees for pollination. This may be caused by lack of care, disease, or the fact that in some fruit sections there are few honey plants for bees to work on after the fruit bloom is gone.

Factors That Determined the Need of Bees

The location and size of the individual orchard are apparently the factors that determine whether or not bees are needed. Orchards not too large in size with varieties well mixed, located near woods, swamps or uncultivated land where wild insects can winter over in large numbers, usually set a satisfactory crop without additional bees. With the conditions that exist in commercial fruit sections where whole communities are engaged in fruit growing and where orchards have been planted by the square mile, the wild insects are wholly inadequate to pollinate effectively the vast expanse of bloom. It is in these locations especially that commercial fruit growers are largely dependent upon the honey bee—the only insect admirably adapted for pollinating fruit bloom that can be readily controlled by man.

In seasons when warm, sunny weather prevails during the blossoming period the wild insects and what honey bees there are near an orchard, have an opportunity to work many hours each day and will generally pollinate enough blossoms for a satisfactory crop. When cold, rainy weather prevails previous to and during the blossoming period, wild insects are of little value, and even the influence of honey bees can not readily be observed for more than a few hundred feet from the location of the colonies.

MR. TOWSON: I would like to ask a question about the relative volume of the tubs you placed in the orchard and the buckets up in the trees, and also I noticed that a good many of the buckets were placed inside the trees whereas some few were placed to the outside.

PROFESSOR HOOTMAN: We started out using tubs, but we observed so much better results from using buckets that there has been a gradual tendency to get away from the use of tubs. We use the buckets in the trees, try to get them up in the sunshine as much as possible. A few of our people have adopted this latter method. That has given us the best results of any method we have used.

MR. TOWSON: Also, in regard to the grafting—to what extent would you carry that out?

PROFESSOR HOOTMAN: If a man is going to graft a tree completely over, we recommend about every third tree in every third row. However, most of them don't like to graft the whole tree over, so they will take, say, every third row on the south or southeast side of the tree and graft about every other tree.

MR. GOLD MILLER: Grafting is much more economical than buckets and tubs?

PROFESSOR HOOTMAN: Yes, that is merely temporary, to get a crop this year, until the grafting or interplanting can be taken care of.

MR. E. D. MCCAIN: In the distribution of your hives I notice you have single hives. Bee keepers in this section have been putting two or three together in case there was a lazy colony.

PROFESSOR HOOTMAN: While we have used the single colony some, the most general practice has been to put two to four together.

MR. TOWSON: How far have you worked out the placement of a colony to do effective work? Say we have a dozen rows or more that are more or less windswept, would it be advisable to put bees in that orchard or in some sheltered place? Would they fly from this place to the orchard when the wind is not strong?

PROFESSOR HOOTMAN: I would prefer to place the bees in the sheltered location and take a chance of their getting over to this wind-struck area.

MR. TOWSON: What distance?

PROFESSOR HOOTMAN: A half mile.

QUESTION: How many to a row?

PROFESSOR HOOTMAN: Peaches blossom much earlier than apple trees and as the bees aren't flying so frequently then we prefer to have them a little closer together. With pears we recommend not more than three rows of a variety together and a distance of twenty feet between the rows. That means your trees will not be more than sixty feet from your pollenizing. One reason why we have received a lot of benefit from bringing bees into the orchard in Michigan is due to the fact that in our fruit sections there are few honey plants after the fruit bloom is gone. Consequently, there has been a shortage of bees in our concentrated fruit section, and instead of encouraging those men to go into the bee business we have encouraged them to rent bees from competent bee keepers who have good strong colonies and have them moved into the orchard, and later take them away, relieving them of a lot of that hazard of arsenical poisoning to the bees.

PRESIDENT ALLEN: Professor Hootman, we certainly thank you for giving us this talk. We greatly appreciate it and I am sure we will all benefit by it.

I might mention that Professor Hootman is the Secretary of the Michigan Horticultural Society.

The meeting adjourned at twelve-thirty o'clock.

TUESDAY AFTERNOON

January 6, 1931

The Second Session convened at one-thirty o'clock, President Allen presiding.

PRESIDENT ALLEN: As the first business this afternoon I would like to appoint some committees.

RESOLUTIONS COMMITTEE:

J. WALTER ENGLAR, Chairman
CHARLES SHOEMAKER
R. R. WALKER

AUDITING COMMITTEE:

DWIGHT WALKER, Chairman
W. H. LONG
H. C. WHITEFORD

NOMINATING COMMITTEE:

E. D. MCCAIN
J. ANDREW COHILL
A. L. TOWSON
FRANK HANSON
LEE ALLEN

PRESIDENT ALLEN: This afternoon the general topic under discussion is spraying for diseases and insects, although the diseases seem to be rather in the minority this time. The first speaker is a man from our neighboring state of New Jersey who always has a wide variety of horticultural experience and who is well and favorably known. He has been down here to speak to us before and I am sure we all enjoy hearing him. Professor Arthur J.

Farley, Horticultural Specialist, New Jersey Agricultural College, New Brunswick, New Jersey, and his subject is "Some Spraying Experiences in 1930." Professor Farley.

PROFESSOR ARTHUR J. FARLEY: Mr. Chairman, Members of the Maryland Horticultural Society, Friends: Before I start in on the discussion of spraying experiences, I want to extend to this Society the greetings of the New Jersey State Horticultural Society. It always seems to me that we have many problems in common and that we might be able to work together a little more on those problems than we have in the past. There are a number of state organizations here in the middle Atlantic states that have some common problems. I assure you it is a privilege to be here today.

SOME SPRAYING EXPERIENCES IN 1930

BY A. J. FARLEY

Spraying fruit trees to prevent injury by insects and diseases seems to be getting more complicated and more expensive from year to year. It is a phase of orchard management that requires careful planning and close attention to many important details. The use of effective and economical materials, the timing of the various applications and last, but not least, thoroughness of application without unnecessary waste of time and material are all essential to successful results in spraying. New materials make their appearance every year, together with new types of equipment, some of which may be very good, while others are of very little value. Recommendations as to the timing of certain sprays vary somewhat from year to year in accordance with the development of the various insects and diseases. In view of the many new developments and the need for adapting recommendations to the conditions that exist in individual orchards, spraying is not simply a matter of following a set schedule but is an operation that requires constant adjustment and close supervision.

My subject is "Some Spraying Experiences in 1930." Practically all I have to say on this topic is based on obser-ing fruit when fertilized with the pollen produced on its vations made and records secured in New Jersey where conditions are not just the same as they are in Maryland. However, I hope that some of our spraying experiences in New Jersey will not only be of interest, but aid some of you in planning your 1931 spraying program.

Materials

Let us consider first the question of materials. Two relatively new materials were used quite extensively in New Jersey during 1930. The materials referred to are cresylic acid and flotation sulfur. Cresylic acid in combination with oil emulsion was recommended in the New Jersey Agricultural Experimental Station spray calendar for use on apples during the delayed dormant period for the control of scale, European red mite and aphis. Records secured from a representative group of commercial apple growers indicate that cresylic acid was used in approximately one-third of the orchards in combination with either oil emulsion or one of the miscible oils. The recommendation calls for 4.5 gallons of oil emulsion to 95.5 gallons of water, plus enough cresylic acid to make the completed spray mixture 0.5 per cent cresylic acid, or in other words, one-half gallon of cresylic acid to 100 gallons of diluted spray provided the brand of oil used has no cresylic acid in it to start with. The chief advantage of this material is the fact that it is much cheaper than nicotine and from all indications just as effective against aphis. One of the chief disadvantages is the fact that it is likely to cause injury if used at a strength greater than is recommended or applied after the leaves are more than a quarter of an inch long. This means that it must be applied during the early delayed dormant period, which in New Jersey starts when the fruit buds show silvery, and ends when the leaves stick out from the fruit buds like tiny squirrel ears. Following the recommendation of cresylic acid the number of growers using nicotine in the delayed dormant spray has decreased from 50 to 15 per cent. Approximately 60 per cent of the growers used oil emulsion in 1930 for the delayed dormant spray, while

25 per cent used one of the miscible oils. We feel in New Jersey that a combination spray effective against scale, aphis, red mite and scab at the delayed dormant period is badly needed at the present time. Investigations looking toward the development of such a combination are in progress, but have not yet reached the point where any recommendations can be made.

Flotation sulfur, used in just a few large orchards in 1929, was used by over one-third of the growers in central and southern New Jersey in 1930. New Jersey Dry Mix and concentrated lime-sulfur on the other hand are being used by less growers each year as summer fungicides. There has also been a material decrease in the use of dust during the last three years, the drop being particularly noticeable between 1929 and 1930. Flotation sulfur was recommended for use in New Jersey at the rate of 10 pounds to 100 gallons of water, starting with the petal fall spray. Flotation sulfur has not been as effective as concentrated lime-sulfur against scab when used in the pre-blossom sprays. It has been very effective, however, when used as summer fungicide starting with the petal fall application. Tests conducted by the Department of Plant Pathology to determine the relative effectiveness of various spray mixtures for the control of apple scab on Rome, gave the following results. Check—unsprayed: less than 1 per cent free from scab; Bordeaux: 1-3-50, 81.2 per cent; concentrated lime-sulfur: 1-50, 98.8; flotation sulfur: 10 pounds to 100 gallons water, 91.6 per cent. The relative amount of russeted fruit was as follows: unsprayed—less than 1 per cent; Bordeaux, 30.4 per cent; lime-sulfur, 14.3 per cent; flotation sulfur, 3.3 per cent. Thirty-two per cent of the leaves showed injury on the trees sprayed with Bordeaux as compared to 25.0 and 6.0 per cent where lime-sulfur and flotation sulfur were used. The failure of Bordeaux mixture to control scab as well as the sulfur sprays was probably due to the abnormally dry weather that prevailed throughout most of the growing season. Flotation sulfur was used alone and in combination with lead arsenate. When used with lead arsenate, lime was added by some growers while others applied the lead arsenate, flotation sulfur combination without lime. There appears to be no necessity for adding lime to such a combination for use on apples. On the other hand the addition of lime is essential when lead arsenate is combined with flotation sulfur for use on peaches, and other stone fruits. The addition of a spreader to the flotation sulfur-lead arsenate combination makes it possible to distribute the spray material more uniformly over the fruit and foliage and is considered very desirable when fighting curculio or codling moth. If a lead arsenate-flotation sulfur combination is used without lime, the addition of a casein-lime spreader may result in severe injury, whereas a very finely divided powdered sweet skimmed milk will not do so. The addition of about 4 pounds of lime to every 50 gallons of mixture will largely eliminate the danger of injury and permit the use of a casein-lime spreader. The lime used should be high in calcium oxide and free from dirt or other foreign matter.

Timeliness in Spraying

My remarks so far have been limited to materials. Now let me review some of our experiences in connection with the timing of spray applications. There is probably no insect or disease in connection with which time of application is more important than it is in the control of apple scab. Over-wintering scab spores usually mature in New Jersey sometimes between the delayed dormant period and full bloom with spore discharge taking place over a period of at least six weeks. The time when scab spores mature is determined accurately each year by the Department of Plant Pathology through the daily examination of leaves sent in from various sections of the state. As soon as the first mature spores are found on the leaves sent in from a certain section of the state, the growers in that section are notified by postal card, circular letter or telephone and advised to insure protection against primary infection by spraying with an effective fungicide before the next rainy period. Last spring this notice was sent out to South Jersey growers on March 20, which was during the delayed dormant period, the regular pink bud spray card not being released until April 11. Between March 20 and April 11 there were only 5 days on which any rain fell, and only once was the amount sufficient to cause scab spore discharge. Starting on April 16, however, rain fell on six of the following seven days, causing a very heavy scab spore discharge. Trees which were adequately protected just previous to April 16 did not become infected as a result of this heavy scrab spore discharge, but in many orchards where the recommended scab sprays had not been completed, scab infection could be traced directly to the rainy period beginning April 16. For almost a month following this rainy period, it was so dry that no scab spore discharge occurred. This brought many South Jersey orchards up to three weeks after petal fall with practically no scab infection, but at the same time allowed large numbers of mature spores to remain in the orchard waiting for a rain to release them and start new infection. This created an unusual situation, since under normal conditions apple orchards in New Jersey that are free from scab infection until a week after the petals fall, will not become infected that year. The fact that their orchards were free from scab infection led many growers to reduce the sulfur content of the sprays applied after the petal fall application. Ordinarily this would have been a safe procedure, but during the past season it resulted in severe scab infection in many orchards and would have been even more disastrous if the rainfall during the balance of the season had been normal.

Curculio is responsible for more blemished apples at harvest time than any other insect found in the average New Jersey orchard. Timeliness is one of the most important factors in connection with the spray applications made for the control of this insect. Applications made just a few days too late constitute in many cases a waste of time and material, whereas applications timed so that the fruit and foliage is adequately protected during the period when the curculio are most active are effective and very much worth while. In New Jersey we recommend a 7-day after petal fall, and a 17-day after petal fall spray in order to provide adequate protection against curculio injury in orchards where it is a serious pest. I regret to say, however, that in too many cases a 10, 12 or 14 day after petal fall spray is applied instead of the recommended 7-day spray, due to unfavorable weather condition, lack of adequate equipment or some other condition, which, unfortunately, Mr. Curculio does not take into consideration when he is in action.

What has been said relative to the importance of timing the sprays applied for scab and curculio is equally important in connection with spraying for the control of codling moth. We recommend that the first cover spray for first brood codling moth be started immediately after one-half of the over-wintering moths have emerged in order that the fruit and foliage may be thoroughly film coated just before the young worms begin to enter the small fruits. The proper time to apply this spray is determined by the Department of Entomology and the growers advised by postal card, circular letter, telephone and personal visit on the part of county agents, extension specialists and others connected with the spray service. In other words, every effort is made to advise the grower just when to spray for this injurious insect because of the importance of timeliness in connection with the various sprays that are recommended. The same procedure is followed with the second brood in those sections of the state where it is a problem. It is sometimes very difficult to convince a grower that now is the time to spray and to spray thoroughly for codling moth, when at the same time it is impossible to find any indication of actual worm entry in any of his fruit. After such injury occurs the same growers may get very much excited and start spraying with every available piece of equipment, but in many cases it is then too late to secure the desired results. Furthermore, a comparatively light infestation of first brood worms may mislead a grower by causing him to believe that the fight is won and that he has no cause to worry about the second brood. In view of the fact that two entomologists are scheduled to talk on codling moth and its control this afternoon, I will not say any more about it except to emphasize again the importance of timeliness in connection with the sprays applied for its control.

Thoroughness and Method of Application

It may seem out of place for me to come down here from New Jersey and talk to you growers about the importance of thoroughness of application in connection with your spraying operations. However, it is such an important factor that I do not feel that it should be omitted from a discussion of this kind. It is not only a question of thoroughness, but also involves economy in the use of labor and material. We all know that if a man uses enough material and takes enough time he can spray thoroughly any fruit tree that ever grew, but in doing so he might spend time and material entirely out of proportion to the results obtained. Furthermore, we want thoroughness of application without injury to the tree or the fruit.

The tendency among the larger commercial growers in New Jersey is to use portable sprayers with plenty of power and large capacity, or install stationary spraying equipment. At least 20 stationary spray plants have been installed in New Jersey during the last three years and all appear to be giving very good satisfaction. On the other hand, many growers are getting just as good results with portable sprayers. Thoroughness of application is not a question of stationary spray plants versus portable rigs, since effective work can be done with both types of equipment. The important factors are that all parts of the tree be thoroughly and economically covered with spray and that each spray be applied within the specified period of time. Under some conditions this can be accomplished most satisfactorily with portable sprayers, whereas under other conditions the stationary plant may be highly desirable. I am not here to discuss the relative merits of stationary spray plants and portable sprayers, but simply mention them as factors to be considered in connection with thoroughness and efficiency in spraying operations. Practically every grower in New Jersey who has installed a stationary spray plant has done so in order to lighten the burden on over-worked portable rigs or shorten the time required to apply certain critical sprays for scab, curculio, or codling moth. We feel that an apple grower should be equipped to cover his entire acreage with spray in not over five days, which actually means at least a week when Sundays and bad weather are taken into consideration. This means equipment with greater capacity than is found in many of our orchards at the present time.

I will cite one or two examples of the effect of thoroughness on the cost of spraying and the results secured. It cost one grower $936.26 for labor and use of equipment and $1,217.00 for materials to spray his apple orchard of approximately 3,300 trees in 1929. This makes a total cost of $2,156.26, or 65 cents per tree, for the season. In 1930 the cost of materials was almost double, or $2,418.50, while the cost of labor and use of equipment was more than double, or $2,579.69, making a total cost of $4,998.19, or $1.51 per tree. The apples harvested in 1929 amounted to 17,985 bushels and the yield in 1930 was 43,345 bushels. It cost 6.5 cents per bushel more for labor and material to spray this year than it would have if spraying costs had been the same as in 1929. At least 65 per cent of the apples in this orchard were injured by codling moth in 1929, whereas in 1930 only 10 per cent of the apples were affected. This man believes the investment was a good one, and is well pleased with the results. His chief problem this year is to secure the same thoroughness of application and at the same time reduce the cost. Another grower who increased the amount of spray applied per tree in a 10-year-old-orchard from 6 gallon to 3.5 gallons per application, reduced the amount of curculio injury from nearly 60 per cent to less than 5 per cent. In this case the cost was more than doubled, but the increase was more than justified by the results secured in the form of clean fruit. Many other examples might be cited to illustrate the value of thoroughness in connection with the application of spray materials. However, I believe enough has been said to remind you of its importance and I hope start a discussion.

In closing, I want to say that our growers in southern New Jersey have learned that it does not pay to compromise between codling moth and spray residue. In other words, insect control is the first consideration regardless of the amount of residue that may be on the fruit when it is harvested. This, of course, means washing of the fruit in many cases before it is sold. As a result of this situation many growers are now operating wet wash apple laundries in order that their fruit may comply with the Government regulations pertaining to arsenical residues. The substitution of dust for spray not only failed to eliminate arsenical residues in many cases, but resulted in a higher precentage of wormy apples. Furthermore, failure to apply late sprays in order to avoid excessive residues caused losses far in excess of the cost of washing. The practice of washing, therefore, is increasing rapidly in those sections of New Jersey where second brood codling moth control is a problem and will continue to do so until some practical substitution is found for lead arsenate or the present arsenic tolerance is increased.

MR. MILLER: The time you speak of in moth control, is that about seven days after the petal fall?

PROFESSOR FARLEY: The time of spraying was the same both years, that is, we drove through the orchard seven days after petal fall in 1929 with the spray equipment, but stopped at the trees in 1930.

MR. MILLER: We blamed the codling moth last year, but we found out it was curculio at the end of the season.

PROFESSOR FARLEY: I know none of this damage was done by curculio, but some of it may have been done by the Oriental peach moth, but we figured the two together both years so that there is a chance for error there. I am just citing these examples because they are such contrasts and relate primarily to thoroughness of application. The timing in both of these cases I refer to was just the same one year as it was the other. The grower was out there spraying at the proper time both years. It wasn't a question of that at all, it was a question of the amount of material applied per tree at the time when the insects were active.

MRS. HARRIS: Did the grower use horses or tractors?

PROFESSOR FARLEY: In this first case I think he used three sprayers altogether. Tractors pulled two and horses pulled the third one. Most of the spraying was done by sprayers pulled by tractors in the first orchard. In the second orchard the first year referred to the portable sprayers were pulled by a good fast walking team of mules, and the spraying the next year was with a stationary spray plant.

MR. ENGLAR: Up until the last week in August we didn't have any signs of the codling moth. The fruit was entirely clean. We sprayed the 14th of July. We used from six to eight gallons per tree. We felt the trees were well covered. There was practically no rain, and the fruit was covered with spray of some kind. We added additional lime to prevent burning. Whether there was arsenate of lead there, I don't know, but there was lime there, the spray was on the trees and yet, we went out there and began to see the effects of moths. The next day it was worse, and each day it seemed to get worse, and yet, at the same time the trees were covered with this spray. What was the difficulty? Wasn't the spray strong enough? Had it lost its effect because it had been there for some time, or what happened? The fruit was covered, yet, the codling moths ate it up.

PROFESSOR FARLEY: I would rather have Professor Cory answer these technical questions on the codling moth. I will say this much in answer to the question, that in New Jersey that application you made would have corresponded with the first application for second brood codling moth.

MR. ENGLAR: That is the last day they advise us to put it on in our State on account of residue, the 15th was the last day, and we finished on the 14th.

PROFESSOR FARLEY: Well, this grower I referred to who had 65 per cent in 1929 and 10 per cent in 1930, I might say that I misled you in saying that his timing was the same both years. It wasn't. It was the same up to that point. In 1929 he had no washing equipment, and the chief idea he had in mind was to control insects as well as he could and not have to wash the fruit. He was advised by Dr. McLean when he could put on his last application and be reasonably sure of coming within it, which was the time you referred to. This year he applied at least two sprays after that date, and as a result, had to wash a considerable portion of his fruit. I would say right off that whereas it may have seemed as though you had plenty of material on there, I doubt very much if you had continued late enough, as to what you did have on there, whether it was lime, arsenate of lead or something else.

PROFESSOR JEHLE: Did he spray at the pink blossom stage?

PROFESSOR FARLEY: No, he started at petal fall.

PROFESSOR JEHLE: In notifying your growers to put on the first application for scab when the spores were ripe, did you find that early enough to notify them?

PROFESSOR FARLEY: Yes.

PROFESSOR JEHLE: We in Maryland hardly think that is early enough, because if we wait until that time, by the time it has gone through the mails we may get a rainy period immediately and have some more discharge before we can notify our growers in time for spraying. We usually notify them a little bit earlier.

PROFESSOR FARLEY: We try to anticipate that just a little bit. It depends somewhat on the stage of the tree development. There have been times when we sent out the delayed dormant spray notice recommending the use of oil or lime sulphur. Now, if a man has put that on and he immediately gets word that scab spores are coming out he is probably all right. He has the protection. That is the thing that I mentioned we are up against in our oil emulsion cresylic acid combination. A man puts that on and he has no protection against scab. We want something we can put in there to get that protection. Speaking as an ordinary entomologist and fruit grower, I think that in 49 years out of 50 that if the grower puts on the delayed dormant spray of lime sulphur, the spring spray of lime sulphur, then his petal fall, that he will be reasonably free from scab.

PROFESSOR JEHLE: In Maryland I think we have to get it on a little earlier than that with the lime sulphur spray, earlier than pink. We find four years out of five, spores start here earlier. Last year we didn't. Our spores were ripe earlier but we didn't get actual discharge, the same as you did in New Jersey. Usually we do get so much rain here that very soon after our spores are ripe we get a discharge. It is very unusual not to get it.

PROFESSOR FARLEY: The thing that always concerns me on this spore discharge is that we can't hold off the rain. As you say, you may send out word and it rains. For all you can do about it, it may rain for three or four days with scab spores being discharged all the time. That really means, it seems to me, that you need protection right through that period from delayed dormant right on up until the danger is over. Or then again, you may spray this week thoroughly and get everything all covered up in fine shape. If you have no rain and have some nice warm weather and next week a whole lot of new growth comes up and still no rain, you have no more protection on that new growth. But I think looking at it from a practical grower's viewpoint, if you can start in with delay dormant and go on through with a good fungicide you are going to hit it right 99 times out of 100. Where we lay ourselves wide open now is when we use oil in that delayed dormant period, particularly if it is a late delayed dormant period.

PROFESSOR JEHLE: We have the same problem here in Maryland.

MR. SANDERS: What proportion of lime and bluestone did he use?

PROFESSOR FARLEY: That was a one-three-fifty.

MR. HARRISON: Do you use cresylic acid without lime sulphur for aphis?

PROFESSOR FARLEY: We haven't tried that.

MR. ENGLAR: Some suggest using lime sulphur in with oil, five gallons to a 200 gallon tank. Does that take care of the scab situation?

PROFESSOR FARLEY: Lime sulphur with oil?

MR. ENGLAR: Five gallons of lime sulphur with that oil in a 200 gallon tank. I should think the oil one twenty, or one twenty-five and five gallons of lime sulphur in that same tank with the oil would take care of the scab situation—do you think it would?

PROFESSOR FARLEY: Will you answer that Mr. Jehle?

PROFESSOR JEHLE: We haven't had any tests with oil and lime sulphur in the state.

PROFESSOR FARLEY: A number of our growers use a combination of that kind, have used it now for a couple of years, but unfortunately for the record and fortunately for them, they are not growers who have ever had very much trouble with scab. I don't know, the only combination I happen to think of now used in a district where scab is severe is the combination of a copper spray and oil for the delayed dormant.

MR. JEHLE: In Maryland the copper in combination with oil gave us good results on peach leaf curl. I imagine if it is good for peach leaf curl, it is also good for scab.

PRESIDENT ALLEN: The next topic on the program is the codling moth. I am glad to call on Dr. W. S. Hough, of the Winchester Field Laboratories, Winchester, Virginia, whose subject is "The Life of a Codling Moth. At What Point in its Life Can We Take Advantage of Its Weak Position?" Dr. Hough.

THE LIFE OF A CODLING MOTH: AT WHAT POINT IN ITS LIFE CAN WE TAKE ADVANTAGE OF ITS WEAK POSITION?

BY W. S. HOUGH, Winchester Research Laboratory of the Virginia Agricultural Experiment Station

During the winter months the codling moth hibernates as a worm beneath rough bark on the tree trunks or hidden in cracks, crevices and scars on the branches of the apple trees, also in cracks, crevices, joints in the weather boarding and other convenient places about packing sheds or buildings where apples have been kept for some time during the harvesting season. Picking boxes also provide suitable hibernation quarters. A careful examination of the distribution of the larvae which made cocoons on eight apple trees showed that 43.7 per cent were in cracks, crevices, pruning scars and various rough places on the limbs, while the remaining 56.3 per cent were beneath the rough bark on the tree trunks. It has been found that larvae which emerge from drop apples tend to migrate in the direction of the tree trunk. The wintering cocoons are not only well made but have the additional protection of the wood in which they are hidden.

About the time that the apple trees are in full bloom and sometimes several days after the blossoms drop, codling moths begin to emerge from the wintering cocoons. The wintering worms transform into the spring brood of moths. Most of the moths of this brood appear about three or four weeks after the blossoms drop. Moths continue to emerge through the month of June.

The spring brood of moths deposit the first brood of eggs during May and June. Eggs begin to hatch about three weeks after the petal-fall stage and the newly hatched worms seek apples in which to feed. About three weeks are required to reach maturity, after which the worms leave the fruit to spin cocoons in various parts of the tree as mentioned in the first paragraph. Moths emerge from these cocoons, usually about 16 to 18 days later and begin depositing a second brood of eggs. The second generation in July and August passes through a cycle similar to that just outlined for the first generation in May and June. The season of 1929 was especially favorable for a third generation in late August, through September and extending into October. At Winchester, Virginia, eggs were deposited from May 15 to October 5.

The Moth

The codling moth measures about three-quarters of an inch when its wings are spread. It may be described as a very shy creature, and having the color of the bark of an apple tree. It is difficult to see in the orchard. Flight is confined mostly to the period around sunset. On cool, cloudy or damp evenings the moths are inactive. Theoretically, if one could lure all moths to attractive baits and destroy them, he would have simple means of control. The principal value of moth baits, however, has been as an indicator of moth emergence in an orchard.

The moth is not a strong flyer and one may take advantage of this by applying special sprays on the fruit trees within a radius of 500 feet of a packing shed or any building where the larvae are known to hibernate.

The Egg

The white disc-shaped eggs are from 1/25 to 1/20 of an inch in diameter. Last summer (June, August and September) we observed the location of 1,000 eggs in an orchard as follows: on the leaves 90 per cent, on the fruit 8 per cent and on the twigs 2 per cent. About two-thirds of the eggs found on the foliage were on the upper surface of the leaves.

The length of the egg stage varies from 5 to 17 or more days in May and June, from 4 to 10 days in July and August and from 5 to 12 days in September. During periods of heaviest hatching the usual length of the egg stage is 6 to 7 days. Although comparatively easy to kill with an oil and nicotine sulphate spray, it is obvious that repeated applications are necessary to present hatching of eggs deposited between sprays.

The Larva or Worm

A newly hatched worm is very small but normally very active. In 1926 and 1930 we carefully followed 55 larvae from the time of hatching until they settled down to work or were lost through falling from the foliage or fruit of the Stayman variety. Of 35 larvae, which began their active life on the foliage, 24 found an apple at some time during the wandering period, although not all remained on the fruit. The average length of the period of wandering was 131.5 minutes, minimum 28 and maximum 525 minutes.

Some of these larvae died on the under side of the leaves, although we were not always successful in finding any evidence of eating. It is not improbable that they picked up minute quantities of lead arsenate as they wandered about on the foliage. Of the 20 larvae which began their life on the fruit, six wandered from the apples to the foliage near the fruit and three of these failed to find the apples again. Now these twenty larvae had nothing to do but settle down and eat into the apple on which they began their life. In spite of this apparent advantage in making life secure, they wandered about for periods varying from 6 to 357 minutes. The average duration of the "wanderlust" period was 80 minutes.

A worm which wanders about without feeding gradually loses weight and becomes weakened through starvation. We have learned from the weights of 2,800 larvae (weighing 100 larvae at a time) that there is an average reduction of 12 per cent in weight, if the larva does not feed within 2 to 4 hours after hatching, when the temperature is above 80° F. During the very warm weather of last July and August we observed the young worms stop in their apparently aimless course to drink water from small globules placed near them. Large globules of water usually frightened them away. When the temperature was above 80° Fahrenheit it was our impression that one of the wants of the young larvae was nourishment in the form of moisture. In cooler weather the loss in weight of the young worms is not as great as in warm weather. Twelve hundred young larvae weighed in July when the temperature was between 82° and 102° F., averaged 16 per cent less in weight than 1,900 larvae of approximately the same age (½ to 4 hours), which were weighed between May 21 and June 3 with temperatures between 62° and 89° F., average 74°. As already stated, larvae which had just hatched weighed more than larvae which were 2 to 4 hours old when weighed in July with temperatures above 80°. During the high temperatures relative humidity is low. Perhaps the desire for moisture as well as hunger may stimulate action on the part of the young worms. At any rate, we have records, beginning in 1927 and continuing to date, of the attack of more than 5,000 newly hatched larvae on unsprayed apples, which show clearly that the percentage of successful entrants is higher when the day is rather warm and dry (maximum temperature 80° to 90° or more) than in cooler weather when relative humidity is higher and the temperature is in the 70's or lower. Less vigor is exhibited by the larvae on cool days, which appears to account in part for the reduced percentage of successful entrants on the cool days. From 54 per cent to 80 per cent of the young worms successfully entered the unsprayed fruit, the proportion depending on the temperature at the time of hatching and attack.

If larvae hatch on rainy days while the fruit and foliage are damp, the mortality is very high. The young worms make very slow progress over wet foliage and as a result few worms are able to find the fruit. In 1926 we found that almost three times the proportion of newly hatched larvae were successful in entering unsprayed fruit on fair days compared to rainy days.

It is a difficult task for a young worm to cut through the skin of a sound apple. The average length of time required for 107 larvae to bite through the skin of Black Twig (Arkansas) apples and bury themselves beneath the rejected bits of skin and apple tissue was 91.8 minutes, minimum 45 minutes and maximum 224 minutes. One worm entered in 13 minutes, but we believe it found a slight slit in the skin which made this remarkable feat possible. When working at the normal rate a larva will make about 14 rejections of apple skin and tissue beneath in 20 minutes. It is extremely difficult to actually observe a worm swallowing any of the bits pulled loose by its large mandibles. But we have observed this on rare occasions.

A study of the behavior of the young larvae on sprayed apples indicates that the worms frequently attack the fruit at the edge of a dried spray spot. Sometimes we find a dead larva lying near a minute pit eaten into a spot of dried spray material. The roughness of the spray deposit seems to stimulate or invite attack. In our orchard spraying experiments we have gotten better control of the codling moth wherever arsenate of lead has been used without a spreader, in other words, by the spot type of spray coverage.

The habit of the young larva in wandering over the foliage and fruit offers an excellent opportunity to kill it by a timely application of an arsenical spray just prior to hatching. The large percentage of eggs deposited on the leaves and the increased amount of time spent wandering over the foliage by larvae which begin their life on the leaves emphasizes the importance of spraying both sides of the foliage in order to reduce the number of worms which may attack the fruit.

I have gone into more or less detail in the discussion of the young larva of the codling moth in order to indicate why I believe this is the point in the life of the insect that we can deal with it most successfully.

The habit of the full grown worms of spinning cocoons in rough bark and in convenient hiding places on the tree offers an opportunity to trap some of them in chemically treated bands. The success of this operation will depend, among other things, on how successful the orchardist is in removing natural cocooning places so that the larvae will enter the bands.

MR. MILLER: Does that mean when you spray you have to hit it on the back?

DR. HOUGH: You have to hit the egg.

MR. MILLER: Dr. Hough, do you still hold to the spray gun for spraying?

DR. HOUGH: Not necessarily. It all depends on the fellow that is operating. It is easier.

PROFESSOR FARLEY: You said once the worms get into the apple through eating their way in they are safe. Now, with us, we can find a great many injuries to apples, but we can't find any worms. What happens to those worms that do puncture the skin? Are they killed or do they just try another place? Do they like the job of getting in through the skin?

DR. HOUGH: What I meant by my statement that once the worm is in the apple he is safe, I mean once he is in and in healthy condition. In all of our work we don't consider a worm really in the apple until he is in and alive for at least five days. There are quite a few worms that get underneath the skin before the poison has had time to sicken them and stop them from working. In that case they will die leaving a sting, and in some cases they fall out of the sting. In other cases you may find the dried remains there, although it is very difficult to find them.

PRESIDENT ALLEN: Dr. Hough, we greatly appreciate your talk.

Now Dr. Cory, State Entomologist, from the University of Maryland, is going to tell us how we can at least control these codling moths.

THE PREVALENCE OF CODLING MOTH IN MARYLAND AND THE CONTROL RECOMMENDED

By DR. E. N. CORY

DR. E. N. CORY: Mr. President and Members of the Society: I think it is perfectly evident to anybody who was in an orchard last year that the codling moth was a factor. Maryland is not unique in this situation. We have had reports from all over the east, and they all carry this same implication, that is, that the codling moth was probably the most serious factor that the orchardist had to deal with outside of the drought. The damage in Maryland has run pretty high, although the damage has been decidedly spotty. We have instances in Maryland where orchardists have attained excellent control, and other cases where the percentage of wormy fruit has gone to tremendous proportions.

This situation was in part anticipated by the staff at the University of Maryland. Mr. Sanders sent out a circular about June 1st that had in it many pertinent things, among which he pointed out that it was absolutely impossible to control the codling moth unless the operations against the first brood were efficient. He also pointed out that there was a situation in regard to egg laying which called for the addition of an extra spray, that spray coming along about the first of June. He also pointed out that there was a degree of laxity in the application of spray materials. That, too, was not general, but we find that it is true in some specific cases, and it is a point that we can't fail to recognize as being one of the outstanding things which we must watch. Professor Farley has told you that in much detail. You have got to do a thorough job. And he emphasized that by pointing out that one grower stopped at the trees this past year; before that he just passed through and sprayed at the trees. That is going to be before you at all times, that you must do a thorough job of spraying and that thorough job of spraying is going to call for more material than we have been using in the past.

As to the timing of the sprays, I thing that that was fairly well done by the Extension Service, and those who followed the spray schedule, put on all that was recommended, did a thorough job, got pretty fair control with one or two exceptions where outside conditions were responsible for the failure.

At this time I think it would be well for me to show you the chart* of the life history, because that is correlated with this matter of timing of the spray. The first chart shows the life history of the codling moth in Western Maryland. These records were made by Mr. Graham. The upper chart shows the emergence of spring brood moths. The trend is what I want you to observe more than just the dates. There was a drop in emergence during May due to a cold spell at that time, and then they increased again and they continue to emerge until the 23rd of June. They began their deposition of eggs rather early, and there was a low point here in egg deposition, another low point here which followed that cold weather that I spoke of. You see, we have a peak here, a peak here, and a peak here of egg deposition. This is the 23rd of June, this is the 23rd of May, this is the 6th of June and this is a later peak which comes along from the 17th to the 22nd of June.

The hatching came along about twenty days after the first emergence. We begin to get hatching and then general hatching along through June and on up into July, the 8th of July. This curve represents the emergence of the second brood, the second brood starting on the 6th of July and running to a peak at the 17th of July and ending about the middle of August, and then followed by a third brood, part of which is plotted here running on into the first week in September. The work was discontinued on the life history at that laboratory at that time.

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* Due to limited space the charts have not been published.

Now, the dates of spraying as given out by Mr. Sanders, were approximately May 24th. Here you have your hatching. May 24th was the beginning of that first cover spray. The second one was June 7th, right along here with the maximum hatching of the eggs, the third one June 21st, right in the middle of this peak, and the fourth one on July 7th to 15th, which gave us a little time after hatching of the last of the first brood eggs. So that as far as timing the spraying was concerned they coincided very closely with the emergence of the moths and the hatching of the eggs.

The experience indicated this year, that a large percentage of the injury to Maryland orchards was due to first brood codling moths. That does not refer to the entire state and does not refer to special cases that I will mention later. The necessity, therefore, for controlling the first brood is evident. We had a survey of the orchards last year to show something of the codling moth damage. I want to show you a chart at this time.

Here we have in brief the results of a codling moth survey at picking time. The upper portion shows results from Eastern Shore orchards, and it is again very much as Mr. Farley pointed out. The problem in the south end of New Jersey, he said, was acute, while in the north end of New Jersey they didn't know what the codling moth problem was. To a certain extent, that holds true for Maryland. At least, the problem on the Eastern Shore seems to be more acute than it does on the Western Shore. The orchards listed here show the percentage of damage in the last column. There are two orchards, first, the dropped apples, and second, the picked apples. In this particular orchard, 97 per cent of the dropped apples were injured by the codling moth or were wormy, 44 per cent of the picked apples were injured at harvest time. In the second orchard, 56 per cent were injured. In the third orchard, 4.8 were injured from the codling moth, in a fourth orchard 5.70, and in a fifth orchard 28 per cent. Those are all on the Eastern Shore, bear in mind, and they represent two things. They represent spotty conditions and they probably represent a difference in orchard practice. We must recognize that there is an cumulative effect in codling moth infestation, and that failure to get a high degree of control this year will in all probability mean a greater failure in the succeeding years. Therefore, any one who has a serious codling moth problem must adopt Professor Farley's suggestion of no compromise with the codling moth.

I heard Dr. Hough state that in his experience it requires intensive, thorough going work to clean up a codling moth infestation, and I feel certain that two years is none too long. It will require in spotty conditions very thorough, very timely efforts to control the codling moth, and these high figures here represent conditions where the codling moth has built up, and also to a certain extent the spraying has not been as efficient in those orchards as it should be. In some other orchards where they haven't had the building up of the codling moth the spraying which has been done has been sufficient to keep pace with the codling moth infestation. But I believe that we all can improve our spraying practice.

On the Western Shore we have infestation of picked fruit running as high as 33 and 34 per cent and running down to zero. We have there in the case of the Western Shore orchards the best example of the value of thoroughness and timeliness. Where the material was applied at the correct time, in sufficient quantities and thoroughly, the codling moth was controlled without serious difficulty. Where that was not done, where sprays were left out, or where they were not applied to the best advantage, the codling moth gave a tremendous amount of damage as shown in that one figure of 33 per cent on Grimes. Even in orchards where the drops were counted in some instances we found only 10 per cent of the drops and 6 per cent of the drops were infested. In another instance where only one spray was applied, 65 per cent of the drops were infested. Now, the reason why only one spray was applied is to be found in the weather records. Many growers felt that they were flirting with trouble if they tried to spray during the hot, dry weather. As a result, many of them curtailed a number of sprays, and when you do that you must bear in mind that you are flirting with another trouble.

The next thing I want to bring to your attention is what I might call a classification of orchards. We believe that there are three outstanding groups of orchardists in a state. There are those orchardists who are getting satisfactory control of the codling moth. These orchards have been fortunate in having a light carryover, but they have also been the orchards in which the most thorough job of spraying year after year in accordance with the schedule has been done. Then there is a group of orchardists who have been getting an increasing amount of codling moth year by year. This group includes the orchardists that have approximately held to their schedule, that have had almost enough equipment, and that have been working to get rid of their fruit early, thoroughly, and promptly. Then there is a final group of orchardists for whom the codling moth is an extremely serious problem, these spotty places. These orchards have a large carryover and failed to control the first brood partly through insufficient thoroughness and insufficient quantity of spray per tree.

For the first group, we recommend that they go ahead and continue their former practice, improving it wherever possible, for the second group that they give special thought to the amount of equipment per acre, and in training of spraymen, making more thorough applications. To both of these groups and the third, we recommend adherence to the regular spray program with the possibility of additional sprays by members in the third group. Members in the third group that lack sufficient equipment must see to it that their equipment is added to in order that they can meet the schedule on time and do a thorough job. They must also adopt supplementary control measures.

Now I want to report some preliminary banding work as carried out by Mr. P. D. Sanders. Corrugated paper bands both treated and untreated were used.

These were placed on the tree about the middle of June. The chart shows emergence records up to October 23rd, and the worms found between the band and the tree on that date. The corrugated bands were either treated in the laboratory with betanapthol, or were commercially treated bands with betanapthol, or were laboratory bands plus aluminum stearate, or were untreated bands. On the untreated bands we had up to October 23rd, 42 worms emerging based on ten bands. Between the band and the tree there were none dead on that date, but there were 394 alive. The betanapthol laboratory treated bands didn't allow any emergence, killed 681 between the band and the tree, and at the time the records were made, only 78 were living. On the commercially treated bands only one emergence was noted, 1,014 worms were killed between the band and the tree, 78 were alive at the time the records were made. On the bands that had aluminum stearate there was no emergence, 905 were dead, 84 were alive. Now, it seems to me that those records indicate that as a supplementary treatment the band has a distinct place in the orchard program where the codling moth has built up to serious proportions.

The next thing that comes to mind is the question of arsenical residues. You must control the codling moth. There can be no compromise in that. You are faced with the necessity of producing first class fruit. Then it resolves itself into a question of how we will handle the arsenical residue situation. Our records for four years up to this year, indicate that the codling moth under almost all circumstances could be controlled within the limits which we would normally expect, by the early season treatments, and the discontinuance of arsenical sprays by July 15th, and our whole program has been predicated upon that assumption based on the facts which we had at hand.

You will recall that when this arsenical situation came out we were advising an additional spray, and in some instances a second additional spray in August, and in order to meet the demand for less arsenic on fruit we cut out the spray after July 15th and for four years we went along in this way, and there was no difficulty in meeting the residue ranges. This was based on examinations in the orchards previous to harvest and checked again by records at harvest time, the analysis being made through the cooperative plan with the State Board of Health. Then last year we found that in a few isolated instances the spray residue was running above the domestic tolerance, and in a number of instances above the world tolerance, and so it became necessary to make analyses at the time of shipping in order that the export form of certificate could be granted. I believe that is entirely wrong. I believe that a system of analysis prior to harvest ought to serve as an index of what can be expected in that orchard, and that export certificates should not be held until the car is loaded. If there is any question about the amount of residue on the fruit, then adequate measures are at hand to take that off, and we know from experience as detailed to us by people who have been in the West, by people in Virginia and elsewhere, New Jersey particularly, that an arsenical residue can be predicted within very close limits based on these pre-season examinations and upon the character of the spraying that the orchardist is doing.

To get back to my story, we had to have these analyses made, and since we are faced with this large increase of the codling moth this year, those who have a serious problem in the control of the codling moth, and each of us know what his situation is, will have to plan in accordance with that situation, and if you fall in Class 3 where it will probably be necessary for you to put on additional sprays, you must also figure on washing the fruit.

Washing equipment is getting more available, prices are lower than they have been, there are home-made devices that can be used, and there is the possibility of community effort in washing of fruit. I don't want you to overlook that. We have striven in many instances to cement community effort, and it seems to me that here we have a splendid opportunity to go ahead and wash fruit on a community basis, whether it be in a cooperative shed or a custom shed makes no difference. But bear in mind that you all must decide for yourselves on the basis of the knowledge you have of your past season conditions as to what the situation you will be faced with will be. We will do everything in our power to help you. We will have a man in Western Maryland, we will have a man on the Eastern Shore, and we hope to be able to give you a spray schedule that will meet your needs and give you individual advice whenever called upon.

MR. TOWSON: Suppose there was no fruit on the peach orchard, do you think we will have curculios another year?

DR. CORY: I think the indications are we will have a normal amount of curculio in another year. In peach orchards, in some instances also in apple orchards I think we will have them.

MR. TOWSON: But during the past summer they didn't have any peaches to eat.

DR. CORY: They had plenty to eat. They don't feed on fruit so much in the late fall except on overripe peaches as they do on the foliage of the peach trees. They can be kept alive just on green foliage.

MR. ENGLAR: Does working with those bands pay for the effort expended?

DR. CORY: Where you are going to use corrugated bands you should scrape the trees. The trees should be scraped now as thoroughly as you possibly can do it. Then your trees will be ready for banding next spring.

MR. ENGLAR: You don't apply bands until next June?

DR. CORY: No.

PROFESSOR FARLEY: I would like to ask Dr. Cory if he is recommending these tree bands.

DR. CORY: We are recommending them as supplementary measures in those orchards where a codling moth population has been built up to an excessive amount. We haven't enough experimental evidence to warrant us in making a general recommendation, but we do feel that under the peculiar conditions of heavy infestations it is wise for that man to use every supplementary measure that is possible.

PROFESSOR FARLEY: There is no danger of any injury?

DR. CORY: We have not found any injury and we have canvassed the situation pretty thoroughly as to other people and we find very little evidence of injury from the bands.

The meeting adjourned at four-twenty o'clock.

TUESDAY EVENING

January 6, 1931

The Third Session convened at seven thirty-five o'clock, President Allen presiding.

PRESIDENT ALLEN: I would like to introduce Dr. D. F. Fisher, Senior Pathologist, U. S. Department of Agriculture, Washington, D. C., whose subject is "Newer Developments in The Washing of Fruits." Dr. Fisher.

NEWER DEVELOPMENTS IN THE WASHING OF FRUIT

BY D. F. FISHER, Principal Horticulturist, Office of Horticultural Crops and Diseases, U. S. Dept. of Agriculture

It is a tribute to the enterprising outlook of this society that the subject assigned for this discussion should concern the newer developments in the washing of fruits rather than an argument as to why it should be done. The progressive lowering of the tolerance for arsenic permitted on apples moving in interstate commerce and the rigid adherence to a low tolerance for apples being exported, has brought an increasing number of growers face to face with the problem each year.

During the past growing season the situation was aggravated by the absence of rainfall which normally removes a considerable proportion of the residue. But wherever borderline conditions have been found it would seem to be the part of wisdom to prepare to clean the fruit. In fact, it appears that the apple industry at large will not be able to escape the uncertainty and insecurity which the spray residue problem creates each year until fruit cleaning requirements are accepted and prepared for as a matter of course.

One of the first reactions of fruit growers when confronted with the spray residue problem, is to curtail the spraying program or to modify it, especially during the latter part of the growing season, in the hope of avoiding the necessity of having to clean the fruit. This frequently results in considerable loss due to an increase of wormy apples. At the same time it often happens that excessive amounts of arsenical residue remain and the fruit has to be cleaned anyway so that a double disappointment results.

The spray residue problem has also stimulated a fevered demand for substitutes for arsenical sprays. Unquestionably it would be desirable to have effective substitutes, particularly if such could be found which leave non-objectionable residues. But until their effectiveness has been fully demonstrated growers should be advised to leave such materials alone. Growers must control worms to stay in business. They cannot afford to experiment independently nor to take chances on unproved methods of codling moth control. They also cannot afford to take chances on being able to remove excessive amounts of questionable residue from substitutes for lead arsenate. In this connection the best advice that can be given is to retain tried and proven methods of dealing with codling moth until substitute spraying materials and modified spraying practices have been thoroughly investigated and demonstrated by orchard trial and any accompanying spray residue problem has been solved.

There are two general methods of removing arsenical residue: (1) dry cleaning and (2) washing. The first need be discussed but briefly. No dry cleaning method or machinery has been devised which can be depended upon to consistently remove more than about 30 per cent of the arsenic carried by the apples. In other words, if the uncleaned fruit is found to carry not over 30 per cent more arsenic than is permitted under the regulations governing shipment, dry cleaning methods might be employed.

When the possibility of further reduction in the tolerance is anticipated, as well as in consideration of possible increased loads of arsenic due to lack of rainfall or to heavier spraying which may be necessary in some seasons, reliance must be placed upon washing methods that are generally capable of removing 75 per cent or more of the arsenic. It has been amply demonstrated that the great bulk of the apple crop can be cleaned easily, safely and simply by washing in dilute hydrochloric acid. This is particularly true if the washing is done immediately after harvest and if other sprays have not been combined with the lead arsenate. Where oil sprays or certain fungicides are used with the lead arsenate difficulties may be encountered which require modification of procedure.

For conditions prevailing in most Eastern fruit growing sections it is not necessary to use hydrochloric acid stronger than 1 or 2 per cent by volume, that is, one or two gallons of commercial hydrochloric acid to 100 gallons of water. In the Pacific Northwest heavier concentrations of acid are generally used but the effectiveness of the acid can be increased in other ways besides increasing its strength. The length of time that the apples are subjected to the solvent is an important factor in the results secured. However, on account of the criticism often directed against fruit washing in the East, that it slows down handling and packing operations to an undesirable extent, it is probable that Eastern apple growers would prefer to employ other expedients rather than slow down the washing operations. This can be done either by adding ordinary salt or by heating the solution. It has been found that the addition of 8 pounds of salt per 100 gallons of acid solution (1 per cent salt by weight) increases the effectiveness of the wash about as much as doubling the strength of the acid. No damage to the fruit has resulted from the use of salt with the acid in this manner, but it has been noted that the corrosive effect of the washing solution upon the metallic parts of the machinery is increased. (The precise manner in which salt acts to increase the solvent effect of hydrochloric acid has not been determined.) In order to replenish the salt solution lost during the washing operations it is suggested that 2 pounds of salt be added at the end of each half-day's work.

Salt seems to be of most value when used before the apples become waxy. By its use a material reduction in washing costs can be effected and a lessening of danger from acid burning can be secured by avoiding the necessity for using strong concentrations of acid.

The effectiveness of hydrochloric acid can be increased very materially by heating the solution. This method is of special use when the fruit has to be cleaned after becoming waxy in storage or when oil sprays have been used. If the temperature of the hydrochloric acid used is increased from 50° to 70° F. the solvent action is increased about 15 per cent. By raising the temperature to 100° the efficiency can be increased about 25 per cent. When salt is added at the higher temperatures the efficiency is increased still further by from 10 to 20 per cent. The effect of the heat is partly in melting the wax and allowing the solvents to get at the spray residue embedded therein and partly also in the well-known effect of heat upon chemical reactions.

There are a number of ways in which the acid can be heated, but no method has yet been devised which will prevent the rapid corrosion and deterioration of the machinery used. This remains as perhaps the most unsatisfactory feature of the entire fruit washing problem. Under the influence of steam, acid and salt, both wood and metals are affected. Many other washing materials have been tested in an effort to avoid this heavy depreciation and while promising results have been secured with a number of solvents nothing has yet been found which can be unqualifiedly recommended. This matter will be discussed in more detail just a little later.

Many inquiries are made as to methods of heating the acid. The particular procedure best adapted to individual requirements can hardly be brought out in a general discussion. The simplest but possibly the most expensive method of heating is to use electric heaters. Thus far no acid resistant heating elements have come to our attention and their replacement constitutes one of the chief reasons for the high cost of this method. A 20 k. w. heater is ordinarily required for a 200 gallon tank.

Steam may be used either by being discharged directly into the tank, which is undesirable because of constant dilution of the acid, or by use of heating coils within the tank. A small boiler of 8 or 10 h. p. is usually sufficient to provide heat in this way. Where heating coils are placed in the acid they soon corrode and have to be replaced. The same is true when the acid is circulated through heating coils placed in a stove or furnace, which is another method often used. The latter, however, is generally cheaper than any of the other methods used since an effective heater may be constructed at home by any handy mechanic. Metal oil drums may be fitted with coils and adapted for use as a stove at small expense, but the coils may have to be replaced once or twice during a packing season.

The most recent development in the washing of fruit is the use of kerosene emulsion. It is particularly useful with fruit which has been sprayed with oil and that which has become waxy. Use of kerosene emulsion with hydrochloric acid and salt solution at 90°-100° F. has made it possible to clean fruit which could not be conditioned by any other method. The kerosene emulsion is a solvent for the natural oils and waxes of the fruit, as well as the oils applied in spraying and so the material must be used properly if the keeping quality is not to be affected. When the fruit is properly washed and rinsed it does not carry any odor after it leaves the machine and injury to the apples has not been observed. Kerosene emulsion should only be used with washing machines which keep the solution rather violently agitated. It should not be used with dipping tanks or where apples are floated through the washing tank.

The most satisfactory emulsion is made by using kaolin as an emulsifier and a deoderized kerosene which can be supplied by any oil company. Soft water is also required. The proportion of each required is as follows:

Kaolin—1 1/3 pounds.
Kerosene—1 gallon.
Soft water—½ gallon.

The water and kaolin should be mixed in a suitable container and allowed to stand until they can be stirred to a thin paste, after which half of the kerosene should be added while agitating violently with an electric mixer of the propeller type. After 5 minutes of agitation the balance of the kerosense can be added and the agitation continued for 10 minutes. The material cannot be satisfactorily emulsified in an ordinary spray tank because the agitation is not suitable. Emulsions prepared as described above are stable for a week or more and remain so for at least 24 hours when diluted in the acid washing solution.

Kerosene emulsion prepared in this way should be used at the rate of about 1½ gallons per 100 gallons of washing solution. To make up for the loss of kerosene emulsion during washing operations it is suggested that about ½ gallon be added after each half-day's work.

Rinsing is important with all washing methods but is especially so where kerosene emulsion is used. Rinse water should not be recirculated unless an abundance of fresh water is sprayed upon the fruit as it leaves the machine.

When sprays other than oils have been combined with the lead arsenate various special problems are encountered. In many sections lime is added to prevent arsenical spray injury. It is generally believed that lime used in this way reduces the efficiency of the lead arsenate, to a certain extent at least, by causing it to flake off more readily. This, however, is an advantage when it comes to cleaning because the residue can be more easily removed by both wiping and acid washing methods. With the latter, however, precaution must be taken to avoid the exhaustion of the acid as a result of its reaction with lime. It is recommended that the acid be tested every hour to maintain an effective concentration.

When Bordeaux spray is used the results are quite similar to those secured when lime alone is added to the lead arsenate. It is very readily removed by washing in dilute hydrochloric acid. But when lime-sulphur is used, extreme difficulty is experienced in removing the residue. It yields to wiping better than to washing and so a combination of the two methods is about the best suggestion that can be offered at this time—washing in dilute hydrochloric acid to remove arsenical residue followed by use of a wiping machine to take off the lime sulphur residue.

The supplemental use of wiping devices either for drying or polishing effect is recommended where other residues are involved, such as casein from spreaders, insect excretions, etc. In some producing sections there is as much interest in connection with this feature as in the removal of arsenical residue.

A discussion of solvents would be incomplete without mention of alkaline washes which have attained considerable favor among some users in the Pacific Northwest. For oily fruit these materials are quite effective and they have the additional advantage of being non-corrosive of metals. They have a number of disadvantages—among which may be mentioned their solvent action on the fruit wax, which may result in a shrivelling in storage unless properly handled. Alkaline washes also are very difficult to rinse off the fruit and fruit injury frequently results from the retention of solvent solutions. Alkaline solutions also attack ordinary pump packing and give mechanical difficulty in this way. The alkaline washes most frequently used are a patented mixture of borax and washing soda or borax, washing soda and caustic soda, and another mixture of trisodium phosphate and washing soda in about equal proportions. If either of these are used emphasis should at all times be placed upon the provision of adequate rinsing.

People who are not fully informed concerning the spray residue problem sometimes say that it is a situation created by machinery manufacturers to force the sale of their equipment. It is probably unnecessary to refute this charge, but in passing it may be stated that it is not essential for anyone to buy a high priced machine to wash his fruit. The manufactured machines now available are highly efficient and are of sufficient capacity to be satisfactory for most demands. However, they are more costly than many individual growers can afford. This need not necessarily deprive them of the use of washing equipment for facilities that will do the work just as effectively as any machine that is manufactured can be built at home for relatively small cost. Detailed plans and directions for constructing and operating both dipping tanks and home-made washing machines can be had on application to the Department of Agriculture.

In many communities the spray residue problem has had the effect of bringing growers together in cooperative groups whereby adequate machinery and facilities for cleaning and packing the crop can be provided and which would be beyond the means of any individual member. Sometimes these organizations carry their function further and provide a marketing service as well—but in the East this is less common than in the Pacific Northwest. Custom washing, handling and packing for a fixed price per bushel or barrel also provides a way in which small growers can get their fruit taken care of, but usually at a higher cost per unit than would be possible if they could conduct their own operations.

The regulations governing the shipment of apples in 1931 have not yet been announced. The tolerance for domestic shipments therefore is not known at this time. It may be anticipated, however, that this tolerance will be lower than last year—and growers would do well to begin planning for this eventuality at an early date and not wait until the harvest season is at hand before making provision for handling their crop.

PROFESSOR ALLEN: Are there any questions?

MR. MCDONALD: You didn't say anything about drying the apples. Do you find it necessary or desirable to dry them in the east before packing?

DR. FISHER: If the solvent is all removed and if you have done a good job of getting the arsenic off, drying is not essential. It is desirable, but not absolutely essential. The presence of moisture on the fruit, of course, provides more favorable conditions for the development of rot, but most of the storage rot results from skin punctures and injuries which result from improper handling. We have heard many complaints about the failure of washed apples to keep well in storage. Whenever we traced these down we found that the results were from careless handling rather than from anything which the washing itself did to the fruit.

MR. GOLD MILLER: At the Inwood packing house we were notified about a week before our picking time last fall that unless we washed the fruit we couldn't sell it, couldn't put it on the market. We immediately sent to Washington for blue prints and we sent a truck to Pittsburgh and got the whole outfit for analyzing the percentage, got that down to the farm, got the washing machine inside of ten days and we found we could wash more apples with that thing, just about double the amount we could with the factory machine, and it was a cost of $600.00 against $1,800.00 for the factory machine. I guess it is there to stay. I guess the apples have to be washed every year from now on. What do you think?

MR. FISHER: It will depend a little bit on the season, of course, depend on your infestation. I know that eventually you are going to have to wash apples every year.

MR. MILLER: We have lost every year by not putting spray on late enough to buy a washing machine for every packing house in West Virginia. The codling moth comes out early in July and we are afraid to spray on account of residue, but if you want to get that codling moth you have got to put on more spray up to the first of August. That is our opinion. You know about it out there, but we don't, we are just starting.

DR. FISHER: I should say you are absolutely right. You have got to control the codling moth and you can't do it by spraying early in the season unless you kill off the moths.

MR. ENGLAR: That machine washed the residue off?

MR. MILLER: Oh, yes. When they came out they were wet. We didn't have a blower. I guess you have to have a tremendous fan.

DR. FISHER: That is another thing. You can't dry apples by evaporation. You can't put enough air over them to dry them by evaporation.

MR. MILLER: Do you have some kind of a wiper?

DR. FISHER: You can wipe a certain amount of it off and you can blow a certain amount of it off, but you can't evaporate it off.

MR. MILLER: We put them into the barrels wet and we never had any of them come back.

MR. GOLDSBOROUGH: What has been the added cost? You spoke of community packing places through the northwest. What do they charge per bushel?

DR. FISHER: As a rule they make a charge for the entire packing operation, not for washing alone. That will vary a little bit with volume and the conditions. The cost of washing alone, however, is usually figured around two to four cents a bushel.

MR. BAGGS: What solution did you use?

DR. FISHER: Hydrochloric acid.

DR. MCLEAN: We found certain concentrations of acid which removed the residues effectively, but I am wondering whether an anlysis would have to be made of every truckload of fruit.

DR. FISHER: If your acid is kept up and you find that it removes the worst samples which you put through there, I wouldn't think it would be necessary that periodical sampling of the fruit from that machine would be sufficient. That is the way it has worked out west.

DR. MCLEAN: Another thing, I understand a company is trying to get patents on this method and if they get it it will raise the cost.

DR. FISHER: The company trying to grab the patent on hydrochloric acid is the same company that has the borax washing soda and caustic soda mixture. I don't believe they are going to get the patent on hydrochloric acid.

DR. MCLEAN: I want to ask about this kerosene emulsion. That will work on apples not very waxy, and there is no danger of burning?

DR. FISHER: No danger of burning.

DR. MCLEAN: I know we have apples in storage which are waxy.

PRESIDENT ALLEN: Dr. Fisher, I want to thank you on behalf of the Society for giving us this talk.

We are next going to have a talk on "1930 Problems and Experiments in the Cumberland-Shenandoah Section, in Removal of Spray Residue and the Equipment Used" by Dr. W. S. Hough. In this talk Dr. Hough has kindly consented to show us some of the things they did down in the Valley.

PROBLEMS AND EXPERIENCES IN REMOVING SPRAY RESIDUE FROM THE 1930 APPLE CROP

BY DR. W. S. HOUGH AND A. B. GROVES, Winchester Research Laboratory of the Virginia Agricultural Experiment Station

On August 15 we were informed that many Virginia apples were carrying amounts of lead arsenate considerably in excess of the tolerance permitted for foreign or domestic shipments. Samples of fruit picked from the trees by official inspectors varied in arsenical residue from a trace to .05 gr. As_2O_3 per lb. In September growers brought 364 orchard samples to the Winchester laboratory for analysis before packing. Of the 128 samples which tested above the foreign tolerance (.01 gr. As_2O_3 per lb.) twenty-one were above .02 gr., thirty-three ranged from .016 to .02 gr. and seventy-three tested .011 to .015 gr. As_2O_3 per pound. The average for the 128 samples was .017 gr. As_2O_3 per pound. Many of these samples were selected from trees showing most residue, others were picked and run over the grading table as in the packing operation. Relatively few were given a thorough wiping, since in most cases the grower wanted to learn how serious his own problem might be.

Means of Removal

Wiping. During the three seasons previous the wiping or polishing process has been largely used to remove apparent residues from Virginia fruit. But this year we were face to face with the problem, "Will the polishing machines remove sufficient quantities of lead arsenate from the apples to meet the requirements for marketing?" Briefly, our experiments with three types of commercial wiping machines widely used in the State showed the following: (1) From the standpoint of removing arsenic there was little difference in the efficiency of the three types of machines used, namely, the Andy Moe cloth polisher and the Trescott and Skinner brushing machines; (2) Analysis of thirty samples of wiped fruit showed an average reduction of 37 per cent in arsenical residue; (3) There was remarkable variation in the amount of arsenic removed, the highest being 86 per cent and lowest 6 per cent. One sample, however, had 33 per cent more arsenic after wiping than was found on the unwiped fruit of the same lot. In 1926 we recall having a similar experience of finding a wiped sample testing higher in arsenic than the unwiped fruit; (4) The amount of residue removed by the wiping process may vary somewhat with varieties, in the case of 13 samples of York Imperial the average removal was 30 per cent. from seven samples of Jonathan 36 per cent and 6 samples of Grimes Golden, mostly 2¼ inches, 39 per cent; (5) Variation in size of fruit appears to be one of the chief factors influencing variation in residue removal from different varieties. When large or small apples were run at the same time the small apples usually carried most of their residue through the machine. Apples of uniform size tended to show a higher percentage of removal.

The experience of wiping large quantities of the 1930 crop in Virginia indicated that (1) wiping was usually sufficient to bring the fruit within the domestic tolerance but not always sufficient to lower it to the limit of the foreign tolerance; (2) double wiping, that is, passing the fruit through two machines was little or no more effective than a single wiping; (3) if consistent removal of more than 30 per cent of the residue is required to bring the fruit within the desired tolerance, wiping machines are not dependable equipment to meet the needs.

Washing

In late August experiments were made to learn how long fruit would have to remain in a dilute hydrochloric acid solution (1 gal.-100) to remove sufficient quantities of arsenic. Fruit was immersed or floated in the acid bath for periods varying from 10 seconds to 5 minutes. It was found that one minute in the acid bath was sufficient to remove from 66 to 73 per cent of the arsenical residue present. Except in very rare cases, this was ample to meet all requirements during September.

In an effort to remove the residue by acid treatment various types of equipment were installed, including dipping vats, home-made paddle washers, three types of commercial washers made and used in the West, and one of new design made in Virginia. A brief summary of the operation of the various equipment studied by the authors is given here.

Dipping. Three men dipped and rinsed an average of 500 crates of fruit per day. The crates remained in the acid solution approximately one minute before they were transferred to the water bath, which contained a pound or two of lime. After removing from the water bath one gallon or more of fresh water was sprayed into each crate. It was better to run the fruit over the grader before it was allowed to dry in the crates and thus avoid the reddish deposits of sediment which often settled on the fruit near the bottom of the crate. No injury has been observed or reported from dipping operations. However, arsenical injury and core rot have been more or less common from dipping operations in the West and growers will do well to use this method with caution.

Paddle Washers. These machines were made locally or by the grower. They were obtainable at prices ranging from $250 to $350 with motor attached. The smaller size, made according to specifications of the U. S. Department of Agriculture, sold for $350 complete, and actually washed from 160 to 300 barrels of graded fruit per day. Slightly larger machines washed 200 to 375 barrels of graded fruit per day. The average amount of fresh water rinse was one gallon per crate of fruit washed. Wherever six or eight spray nozzles were used instead of the perforated pipe to deliver the fresh water rinse, the above amount was adequate to remove all traces of acid on the fruit.

Paddle washers were satisfactory for removing arsenical residue when the acid solution was kept at proper strength. Unless made with much care this type of machine gave more or less trouble mechanically, especially the conveyors would stall, fruit would be crushed, sprockets would not hold and chains would break. Aside from mechanical difficulties the chief disadvantages in using a paddle washer are unsufficient capacity and lack of any drying unit. Efforts to dry the fruit by blasts of air from elaborately constructed fans, passing the fruit over hair brush machines or under blankets were without value and were usually abandoned after a fair trial.

Commercial Washing Machines. Both the jet spray and flood type of machines were used with satisfactory results in removing arsenical residue. In every instance efforts were made to increase the capacity of the machine by speeding it up. Even machines of largest capacity obtainable were much too small for the capacity desired in a number of cases. A number of jet spray machines with steel-rod conveyors were made to wash 50 to 100 per cent more than their rated capacity by speeding up the conveyor. Machines with shuffleboard conveyors usually washed less fruit than their rated capacity. Increasing the capacity by increasing the speed of conveying the fruit through the washer resulted in decreasing the efficiency of the air drying system. In case of the towel drying units, speeding the machines did not decrease the drying efficiency to any marked degree. The result was that the towel drying units removed more water from the fruit than any other drying systems observed.

Except for two large machines of a new design no mechanical difficulties were experienced with the Western fruit washers when they were properly installed. The major difficulty in installing the machines was due to lack of space in the packing house, or to inexperience in details of installation.

Acid Solution. Experiments made at the laboratory showed that 1 gallon hydrochloric acid per 100 gallons was sufficient to bring the fruit within the foreign tolerance while the weather remained warm. Sprayed fruit was washed in acid solution varying in strength from .1 per cent to 3¼ per cent actual acid (that is about one-third of a gallon to 10 gallons of acid per 100 gallons), and a gradual increase in removal accompanied the increase in the proportion of acid used. No injury followed the use of the higher concentrations of acid. According to best information available the addition of acid beyond 12 gallons in 100 gallons is not justified from the standpoint of residue removal. Some growers in the Pacific Northwest have informed us that they do not consider it safe to use more than 4 gallons of acid per 100 gallons of washing solution because of the danger of injuring the fruit. It is evident that the limiting factor for safety is not so much in the strength of acid solution as it is in the amount of fresh rinse water used.

During September temperature of the acid solution was above 70° F. and hydrochloric acid was used at the rate of 4 or 5 quarts in 100 gallons. After the first week in October temperature of the water usually ranged between 62° to 72° F. and wherever arsenical residue usually tested above the domestic tolerance, growers began to use 2 gallons of acid per 100 gallons of solution. For several days during the third week of October the night temperature was around freezing and the highest day temperature was 57° F. Several cars of fruit which were washed in paddle-washers, failed to come within the foreign tolerance and one was considerably above the domestic tolerance. The acid solution tested around ½ per cent (1½ gal. acid—100) and the unwashed fruit was testing as high as .03 gr. As_2O_3 per pound. It was evident that the acid solution was too cold to remove sufficient quantities of the arsenic, although the same acid strength had been satisfactory up to that time.

Water Rinse. The most important operation in connection with washing fruit is rinsing with fresh water. Growers were usually able to keep the acid solution near a given strength, but it was necessary to stress the importance of more rinse water in a majority of instances. Rinsing was greatly improved on the paddle washers by using six or eight spray nozzles to deliver the fresh water on the fruit. Furthermore, less water was required to rinse the fruit satisfactorily than when perforated pipes were used. For each bushel of apples washed, one gallon of fresh water sprayed on the fruit as it was conveyed out of the water bath was sufficient to remove traces of acid taste and in all cases gave satisfactory results. In other words, from 3 to 3½ gallons per minute for the paddle washers and 3 to 5 gallons per minute for the commercial washers was required for satisfactory rinsing.

One grower had no running water available. He hauled water in his spray machine and changed the water bath at the beginning of the day, at 9.30 A. M., at noon and at 3.30 P. M. About one pound of lime was added an hour after the water bath had been renewed. From 200 to 250 barrels of fruit were packed daily and there has been no evidence of injury. Acid was used at the rate of 1 gallon per 100 gallons of solution and renewed daily. Arsenical removal was satisfactory.

Drying. As already mentioned, the efficiency of the air drying system on commercial washers depended on the rate at which fruit was washed. When speeded up to increase capacity air drying was less effective. From the standpoint of removing water and cleaning the apples of leafhopper specking, dirt and smears of various residues the towel drying units which were used on certain commercial washers were the most satisfactory drying systems observed. In addition, the towel wiping tended to polish the fruit so that it had a brighter and cleaner appearance.

Leafhopper specking was serious in some orchards and cases are known where its removal was necessary before a No. 1 grade could be packed. The only practical method of removal proved to be a commercial fruit washer equipped with a towel drying unit. The action of the acid and water solutions soaked the specks sufficiently for the towels to remove all of the specking except for an occasional spot deep in the stem end. The specking was more effectively removed by the towels after the fruit had passed through the acid wash than when no acid was used. There was no evidence of removing leafhopper specking from any other type of washer or any type of dry cleaning equipment, such as the wiping machines commonly used in Virginia. Specking was removed from all varieties affected in the Shenandoah-Cumberland Valley section. Through the courtesy of Dr. P. J. Chapman of the New York Experiment Station we received a sample of Rhode Island Greenings which showed a fairly large amount of specking. This proved to be the only variety from which we were unable to remove nearly all of the spots by passing the fruit through the washer once.

At the time the Rhode Island Greenings were washed the acid solution tested only .25 per cent (about 3 quarts acid in 100 gal.). Judging from previous experience we should have obtained a more satisfactory removal of the specking, if as much as 2 gallons of acid per 100 gallons of wash solution had been used. For most cases of specking, however, we have found 1 gallon of acid per 100 gallons of wash solution to be sufficient.

Washing Apples in Storage

Because of the low temperature which prevails in storages and also because of the increased amount of wax on the fruit, washing storage apples is more difficult than washing fruit just after picking. The temperature of the acid solution in the commercial washer in the Winchester cold storage was usually less than 48°, the average being around 40° to 45°. Experiments showed that increasing the acid concentration to 3 gal. per 100 gal. of solution did not result in sufficient removal in all cases. Small fruit testing higher than .016 gr. As_2O_3 per pound was not always cleaned sufficiently to come within the foreign tolerance.

The addition of 8 lbs. of salt per 100 gallons of washing solution aided somewhat in removal of the residue. Two lots of Yorks and one of Ganos carrying from .018 to .04 gr. As_2O_3 per pound were washed in 2/3 per cent acid solution with and without salt. The temperature of the acid solution in the washing machine was 48° F. and there was an average of 61 per cent removal without salt and 70 per cent with salt. Acid was increased to 3 gallons in 100 gallons but we were unable to increase the percentage of removal. The acid bath was then heated to 100-110° F. by injecting steam from a 16 h. p. traction engine. Three gallons of acid and 8 lbs. of salt were used in the wash solution and removal of residue has been sufficient to bring all fruit treated within the foreign tolerance. Because of dilutions of the acid solution by condensed steam, it is necessary to add acid about once an hour. The warm temperature is easily maintained by regulating the amount of steam injected.

In a series of laboratory experiments York Imperial and Gano apples were dipped or floated in hydrochloric acid solutions with and without one per cent of salt. The temperature of the solutions was 65° F. The results of these experiments are given in Table 1.

TABLE No. 1—Laboratory Experiments on the Removal of Arsenical Residue by Hydrochloric Acid Wash With and Without Salt. Winchester, Virginia, 1930.

No. of Samples	Variety	Wash Solution	Average Removal
11	York Imperial	.3% to 3¼% acid and 1% salt	75%
10	York Imperial	.3% to 3¼% acid	76%
3	Gano	.3% acid and 1% salt	83%
3	Gano	.3% acid	82%
7	York Imperial	.3% acid and 1% salt	68%
7	York Imperial	.3% acid	67%

From these tests it does not appear that the addition of 1 per cent salt was of practical value in the removal of arsenic from York and Gano apples when the dipping or flotation method of washing was used and the temperature of the wash solution was 65° F. The unwashed fruit tested as follows: York Imperial, .03, and Gano, .036 gr. As_2O_3 per lb. These apples were washed within two weeks after picking.

Cost

The most reliable data available indicates that apples were washed before packing for 2½ to 5c per barrel of graded fruit. These figures do not include cost of washer or depreciation, but merely extra labor required, power and acid used. Washing storage fruit cost 15c to 17c per barrel.

Keeping Quality of Washed Fruit

Up to December 1 we could see no difference in the keeping quality of washed and unwashed apples held in storage at Winchester. Wherever the home-made paddle washers were used the apples were wet when packed in barrels. Up to the present time (December 1) no difference has been noted between fruit packed wet and fruit packed dry.

I wish to add that most of the chemical analyses reported in this paper were made by the Division of Chemistry of the Virginia State Department of Agriculture.

Slides and a moving picture of apple washing operations were shown in connection with Dr. Hough's address.

PROFESSOR FARLEY: I would like to ask if these apples that are being washed in Virginia now were put in storage with shredded waxed paper in the packages?

DR. HOUGH: Some of them were and some of them were not.

PROFESSOR FARLEY: What has been the experience with the apples that were stored with the waxed shredded paper?

DR. HOUGH: I haven't heard very much about it.

PROFESSOR FARLEY: You will before they get through.

DR. HOUGH: Up to date we haven't. Most of the apples that were packed they had not intended to wash in the first place, but they found they had to wash them for export.

QUESTION: Could you use the paper with wet apples and pack them wet?

DR. HOUGH: They were used, yes.

PROFESSOR FARLEY: It has been the experience in New Jersey in washing apples out of storage that have been packed with shredded paper that the things get pretty well plugged up. It sticks to the apples in a good many places and comes off and gets over the jets, and it is not so good for any of the washers we have in operation at the present time. When they have been washed before putting them in storage it is much simpler.

There is one point that occurred to me in connection with the situation as explained in Virginia this year. The statement was made that everybody was hoping and praying for a rain. We were doing the same thing in New Jersey. If that rain had come I question whether it would have solved the spray residue problem, because Dr. McLean has found in New York you can go into an orchard after a heavy rain and find apples with heavier residue on them than you found before the rain. That may seem rather absurd, but it is the truth nevertheless, that the rain will wash the arsenate of lead down from above onto the lower parts of the tree, and while most of the apples in the orchard will have less residue on them, you will find apples that have more. So any one who feels that rainfall is going to solve the arsenical residue problem if you spray late, is going to be disappointed.

MR. GOLD MILLER: We picked out five or six trees that were loaded heavy and we put on 500 pounds pressure and we went through there and took the leaves off those trees. I thought we got every bit of that residue off. I took samples off the trees that were washed and those that weren't and couldn't tell one from the other. It didn't do a bit of good. We thought we discovered a real thing there in washing them on the trees. But it didn't work.

PROFESSOR FARLEY: Several years' experience show if you spray after a certain date you are going to be above the tolerance whether it rains or doesn't. Rain isn't a factor at all except as an increase in the size of the apples, that is all, but you will have your problem there just the same, just as soon as you begin spraying after that date that was mentioned, July 10th to 15th, without regard for the amount of rainfall.

MR. J. ANDREW COHILL: Mr. President, I think these several talks that we have had were probably the most constructive talks we have had in a long while at any of our meetings. I am told so far as the State of Maryland is concerned that last year there were actually three orchards that showed an excess of residue. One orchard, as I understand it, was so bad even brushing did not take care of the situation, but in all other cases so far as the State of Maryland is concerned it was not necessary to use a washing machine.

We are getting into a mighty expensive proposition here when we get into this washing business. It has been very clearly brought out here by the last talk we have had that these apples were not dried by the home constructed machines. I question whether these apples going into storage in a wet condition is the right thing. I would like to know whether there has been enough evidence shown so that we can put these apples into storage wet. If we have to come to this business of washing apples, I say yes. But I certainly am inclined to feel that we have something here to learn about this washing business. I am just about to finish what I think is one of the most modern packing houses in the east. I am ready to spend that money which would be necessary to put out a finished product. But I am not convinced from the conversation I have had with people who have washing machines, that it is necessary. In fact, I am inclined to say that it isn't necessary as a whole. In the first place, I don't know where we will get the money to buy these washers, and in the second place, if it isn't necessary, why should we have them? So I feel just a little hesitant about putting in an expensive equipment if it isn't going to be absolutely necessary.

PRESIDENT ALLEN: Mr. Cohill, would you like to have some of the speakers tell you whether it would be necessary to put it in or not? I think that is more or less of an individual proposition.

MR. COHILL: I do sincerely feel that this is going to work a tremendous hardship on the small grower. It is almost forcing him to go into the larger development for a community packing house. I wonder if either of the last two speakers has given a thorough test to the wet apples in cold storage?

DR. FISHER: I think I have probably seen several thousand barrels of apples in storage, and we have records of a great many apples in cold storage. I don't think there is any particular danger in placing wet apples in storage if the washing has been done properly.

MR. COHILL: Were they wet when they came out?

DR. FISHER: No.

DR. HOUGH: That was the experience this year. There were a good many thousand barrels put in storage wet, and unless we knew the history of those apples we couldn't have told it when they came out. That was one of the greatest fears, of course, at the beginning of the season, but I haven't heard that fear expressed since the picking season ended. The answer to the other question as to whether it is necessary, I would say that is entirely an individual proposition. In Virginia we are taking this attitude, that no man ought to wash against his will, certainly not. If he doesn't want to wash, the thing to do is quit spraying at the time of year when he won't have to wash, so your worries are all over so far as that is concerned. You may have some other worries, but that part is settled. That is the only thing we can do, so we are not trying to influence anybody one way or the other. If anybody has tried to keep the Virginia fruit growers out of this washing business any more than I have, I don't know who it has been, but now that we have gone through this thing one year the procedure down there is going to be very simple. This year we had more inquiries about putting on a late spray than any year up until the 15th of August. Then it all died out, because everybody suddenly became aware of the fact that they were up against this spray residue problem.

Now, we simply recognize the existence of the two groups of fruit growers, those who are going ahead and making some arrangements to wash and spray as late as necessary to control codling moth, and some years they may not have to wash at all, even though they do spray as late as July 15th. But in most cases they will be so very close to it, especially if the domestic tolerance is lowered to equal the foreign tolerance, that I believe I am not in authority to speak except from the warning that has been given us from time to time that it is not so far off as some of us might think. As to those who don't want to wash, I admire your courage. Go ahead. Just quit spraying in time and you won't have to wash. What may follow, I don't know. You will find out.

MR. ENGLAR: Have you ever had any difficulty in handling those wet apples? They have got to be sorted out, picked out. You have got to do some handling while they are wet. With what little experience we have had, all we need to do is run some wet apples a little while, and they look messy in the barrels. I was wondering whether you had any experience.

DR. HOUGH: Yes, we did, until they cleaned their grading machines. The grading machines must be clean. If you run wet apples over a dirty grading machine you have a mess. You have got to use soap and brushes to clean the machine thoroughly.

MR. ENGLAR: Will it stay clean?

DR. HOUGH: It will stay clean.

MR. J. ANDREW COHILL: Will one of the American Fruit Growers tell us how these wet apples came out of storage?

MR. BAGGS: We had a couple of cars that showed some trouble, but we couldn't attach that to any particular incident. We don't know whether it was the market or the fruit. We believe it was the market. There wasn't any inspection, any person who could tell us what was wrong with these apples. Outside of one or two cars we had no trouble. I have seen a good many cars of fruit that were washed this way, and you can't tell it unless there happened to be some stem punctures that were very bad, and I am inclined to doubt if those were washed. I think they were wiped. I haven't seen any trouble that could be wished onto washing.

PRESIDENT ALLEN: Dr. Hough, we certainly appreciate your courtesy and instruction.

I am very glad to see in the audience the President of the University of Maryland. I would like to hear from Dr. Pearson. (Applause.)

DR. RAYMOND A. PEARSON: Mr. Chairman, Ladies and Gentlemen: I thank you very much for calling on me, but I will not detain you. I would like to congratulate you upon the successful meeting that you are having. It goes to prove that while the drought has had a bad effect on the apples, it has not killed off the apple growers. I join with you in the hope that in another year the conditions that you have been fighting against this season will be replaced by the opposite, that in your pockets will be enough to cover two seasons.

But, Mr. President, it seems to me that you are all on the wrong track on this spraying and washing business. I join with you in appreciation of what the gentlemen have brought to us from Virginia and New Jersey, but the more I have listened the more I have wondered why Dr. Cory doesn't bring out a spray that the bugs don't like, and the Englishmen do like! Then you won't have to wash the apples. The more that stays on the better it will be, and I would suggest a solution be made of water and just enough brandy to kill the bugs! I think that will increase the sale and increase the price.

I was in a delicatessen store the other day and I saw a jar with just four peaches in it. They were so beautiful I asked the price and the price was $1.48. He said that because of the brandy, not the peaches. So it may be that Dr. Cory, who is a very ingenuous fellow, will fix it so that after a time you will not have to work with these present methods of doing a thing and then turning around and undoing it in order to please everybody.

I certainly wish you success in developing something along this other and better line.

DR. CORY: I want to say to the horticulturists that there is distinct progress being made on arsenical substitutes, particularly in the northwest and in the State of New Jersey along different lines, and we ourselves have some very favorable indications with regard to a new insecticide for volume of control.

The meeting adjourned at nine-twenty o'clock.

WEDNESDAY MORNING

January 7, 1931

The Fourth Session convened at ten o'clock, President Allen presiding.

PRESIDENT ALLEN: The meeting will come to order. I am sorry to report this morning that Mr. Kitchen, Assistant Chief of the Bureau of Economics, was not able to be with us, but he has sent what I am sure is an able substitute, Mr. W. L. Evans, of the same bureau, and he will now discuss "How the Borah-Summers Bill Affects the Growing of Fruit." Mr. Evans.

MR. W. L. EVANS: Mr. Chairman and Members of the Horticultural Society: I appreciate this opportunity to explain the provisions of the Borah-Summers Bill, or as it was later named, the Perishable Agricultural Commodities Act, for we feel that a knowledge of that act will add considerably in bringing to the fruit and vegetable industry the benefits which were intended to be derived through the enforcement of the law.

Enforcing this law is not a matter of making a record as to the number of violations that can be found or the number of persons to be prosecuted, but rather it is a matter of abolishing unfair practices with a view to benefitting or protecting growers and shippers from such practices, through the requirement that all commission merchants, dealers or brokers who handle fresh fruits or fresh vegetables in interstate or foreign commerce shall be licensed, and providing that the Secretary of Agriculture may suspend licenses in the case of violations, a very strong incentive to honest dealing has been made.

All of you no doubt are quite familiar with the provisions of the Produce Agency Act which has been in effect for over three years and a half. The differences between the Produce Agency Act and the Perishable Agricultural Commodities Act are several. First, the Produce Agency Act relates only to consignments, whereas, the Perishable Agricultural Commodities Act deals with purchases and sales as well as consignments. The Produce Agency Act relates to dairy and poultry products, fruits and vegetables, and all other perishable farm products, whereas, the Perishable Commodities Act relates only to fresh fruits and fresh vegetables. The Produce Agency Act is a criminal statute, violation of which is punishable by fine or imprisonment or both. The Perishable Agricultural Commodities Act is not a criminal statute, but provides for licensing. The Produce Agency Act does not require licensing. The penalty for violation of this new law is the suspension of the license and publication of the facts.

In enforcing this law the Bureau of Agricultural Economics of the Federal Department of Agriculture is very anxious to be of service. We hope to enforce this law in a way that will benefit the industry, not cause any more hardship on any individual than is necessary, and hasten the time when those practices which are frowned upon and which interfere so much with good business shall be done away with.

I will endeavor to explain the provisions of this new law. I shall be very glad to endeavor to answer questions. I should explain, perhaps, before going farther, that since Congress provided funds only sufficient to take care of the licensing and did not provide funds for enforcing the law, we have not been able to set up an organization yet that will adequately carry on the enforcement work. In the meantime, however, we have received hundreds of complaints by wire and by correspondence, and we have done the best we could with the Produce Agency Act force to handle the complaints. We have handled a great many of them by wire. A number of them have been settled satisfactorily; a number of them are pending now awaiting further action after funds are provided, and we are expecting that more funds will be provided within the next month or two, and then we will fully organize and be in shape to handle complaints properly.

The Perishable Agricultural Commodities Act was passed and approved by the President on June 10, 1930. Although the act was effective June 10th, six months were allowed for the getting of licenses. Therefore, any commission merchant, dealer or broker who comes within the provisions of this act is subject to a penalty of $500.00 and $25.00 per day for the time that he has operated without a license since December 10th.

In order to explain the provisions fully, I think first it would be well to read the definitions of commission merchants, dealers and brokers.

"Commission merchant. This term means any person engaged in the business of receiving in interstate or foreign commerce any perishable agricultural commodity for sale, on commission, or for or on behalf of another.

"Broker. This term means any person engaged in the business of negotiating sales and purchases of any perishable agricultural commodity in interstate or foreign commerce for or on behalf of the vendor or the purchaser, respectively."

The term "Dealer," however, is more comprehensive. It is a little broader than what we usually think of as a dealer.

"Dealer. This term means any person engaged in the business of buying or selling in carloads any produce in interstate or foreign commerce; except that no producer shall be required to obtain a license as a dealer if selling only produce of his own raising. A person buying any produce solely for sale at retail shall not be considered a dealer until his purchases of such produce in any one calendar year are in excess of 20 carloads. Producers selling only produce of their own raising and persons buying produce solely for sale at retail whose purchases of such produce do not exceed 20 carloads in any calendar year may elect to secure a license and in such case shall be considered as dealers."

You will notice that dealer, therefore, includes the buyer or seller of fruits or vegetables at the shipping point as well as the dealer in the market. It does not include growers, which I assume is your status in most instances, provided you do not sell any fruit or vegetables other than your own. If you sell any fruits or vegetables belonging to some one else, shipping them in interstate commerce, you are required to obtain a license the same as any other dealer. Canners fall under this provision and are required to be licensed under the clause describing interstate commerce for the reason that the processed article is going into another state. I will go into that more fully when I read the definition in relation to that.

A great many people have written in seeming to be under the impression that a shipper or a dealer does not have to have a license unless he handles twenty carloads. That twenty carload limitation applies only to retailers, those that buy fresh fruits or vegetables for sale only at retail. In every other case, if you handle as much as one carload in interstate commerce a license is required, and if a commission merchant handles any fruits or vegetables whatever in interstate commerce, no matter how small, even an express consignment, he is required to have a license.

MR. ENGLAR: There is no limit to the number of cars you ship of your own growing?

MR. EVANS: There is no limit whatever as to how many cars of your own you ship, if you do not ship or sell fruits or vegetables belonging to some one else, ship them interstate commerce, you don't need a license. The definition to which I just referred regarding interstate commerce, I will read:

"Interstate or foreign commerce. This term means commerce between any State or Territory, or the District of Columbia, and any place outside thereof; or between points within the same State or Territory, or the District of Columbia, but through any place outside thereof; or within the District of Columbia."

That is, all transactions within the District of Columbia fall under this act. Now in explanation:

"A transaction in respect of any perishable agricultural commodity shall be considered in interstate or foreign commerce if such commodity is part of that current of commerce usual in the trade in that commodity whereby such commodity and/or the products of such commodity are sent from one State with the expectation that they will end their transit, after purchase, in another, including, in addition to cases within the above general description, all cases where sale is either for shipment to another State, or for processing within the State and the shipment outside the State of the products resulting from such processing."

Now, perhaps it appears to you to be quite involved. It is under this provision that canners are required to be licensed, because it has been held that as their products resulting from the processing are sold in other States, and the canner buys fresh fruit and vegetables even from growers within his own State, it is necessary that he be licensed. The only respect in which a canner escapes being licensed would be that all of his canned goods be sold to points within the same State.

It also provides that "commodities normally in such current of commerce shall not be considered out of such commerce through resort being had to any resort or device intended to remove the transactions in respect thereto from the provisions of this act."

It might be well to state also that storage houses would need to be licensed if they buy fresh fruits or fresh vegetables and ship them later outside the state. If they do not buy, they do not need to be licensed. Cooperative associations which sell fresh fruits or vegetables in interstate commerce require a license, but those who do only packing and grading and do not sell do not need to be licensed. Persons, or associations, or dealers who handle only products within the state do not fall under this act. The small jobber in a market who buys in small lots from broken carloads, even though they have come from other states, does not need to be licensed. But if he buys a whole carload and then distributes it he would have to be licensed.

Now, it is necessary in analyzing this law to define in carloads, because the law states that the Secretary of Agriculture shall define carloads, and that the term shall include wholesale or jobbing quantities. So the Department has defined a carload to be:

"In carloads. This term means such quantities of produce as are shipped or received by freight or express in cars on which transportation charges have been assessed at a straight and/or mixed carload rate, and/or the aggregate of such quantities of produce as are shipped or received by a dealer by freight, express, truck, boat, or otherwise, in lots of not less than one-fourth of a carload in any calendar year as determined by the tariff minimum weight for any such commodity as prescribed by any railway tariff on interstate shipments reduced to such minimum carloads."

That means that the trucker in interstate commerce who trucks as much as a quarter of a carload at a time, or any one who receives by boat or by interstate fruits or vegetables in as much as a quarter of a carload needs to be licensed as if he handles as many as four quarter loads, making one carload.

Now, the question might arise as to what constitutes perishable agricultural commodities. I see it is referred to as fresh fruits and vegetables, but the law specifically states that: "Every kind or character of fresh fruits and vegetables are included, whether or not frozen or packed in ice."

To make that clear, we have put this definition in the regulations, that it includes those commodities held in common or cold storage, but excludes those which have been dried or otherwise manufactured into articles of food of a different character. In other words, a person buying canned goods does not need to be licensed, although the canner who buys the fresh fruits and vegetables for canning needs to be licensed.

In order to secure a license, application has to be filed with the Bureau accompanied by a check for Ten Dollars. The license is good for one year, and may be extended by the annual fee of Ten Dollars. The same license will continue in existence, but will be extended. Dealers having branch houses may secure licenses for their branch houses if they desire. In that case, if a branch house violates the act it is found necessary to suspend its license, but it does not suspend the license of the entire organization throughout the country. However, if the parent organization fully controls the branch houses and prefers to take out only one license, that is satisfactory to the department, but it would mean closing the whole outfit in case of violation.

Another important feature of the law is the requirement that adequate records be kept. The law puts it this way, that the record must fully and correctly disclose all transactions involved in the business, and if such accounts, records, and memoranda are not so kept, the Secretary may publish the facts and circumstances, or by order suspend the license of the offender for a period not to exceed ninety days.

Now, it would hardly seem possible for the department to indicate or specify exactly what records must be kept. But in enforcing this law it is incumbent upon us to determine whether the records are adequate, and as a guide to that, the regulations have stated the various kinds of records that we consider adequate, and that should be kept.

The most important feature of the law after the licensing has been accomplished, is that relating to unfair practices.

Unfair practices is the "Making of fraudulent charges in respect to any perishable agricultural commodity received in interstate or foreign commerce." In other words, incorrect accounting on consignments, the same thing that is covered in the Produce Agency Act. If a commission merchant understates the gross receipts or overstates the charges, or has any charge in there that was not incurred such as carting, for example, when there is no carting, he has violated the act by giving you a false and fradulent accounting. The law also prohibits the rejection or failure to deliver produce in accordance with the terms of the contract, and not only in accordance with the contract, but in accordance with the contract for buying. In other words, if a dealer buys your fruit or contracts to buy your fruit, and before you have shipped it he backs out and you can show a loss he is liable even though the fruit has not moved out of the state, because that was a contract to buy.

The provision that was in the Produce Agency Act prohibiting dumping or destroying without reasonable cause is included in this act. Another provision reads, and this is one of the most important: "It is unfair for any commission merchant, dealer, or broker to make for a fraudulent purpose, any false or misleading statement concerning the condition, quality, quantity, or disposition of, or the condition of the market for, any perishable agricultural commodity which is received in interstate or foreign commerce by such commission merchant, or bought or sold or contracted to be bought or sold in such commerce by such dealer; or the purchase or sale of which in such commerce is negotiated by such broker; or to fail or refuse truly and correctly to account promptly in respect of any such transaction in any such commodity to the person with whom such transaction is had."

It also provides, "No commission merchant, dealer, or broker, for a fraudulent purpose, shall represent by word, act, or deed that any perishable agricultural commodity received in interstate or foreign commerce was produced in a State or in a country other than the State or the country in which such commodity was actually produced."

It also provides that no commission merchant broker, or dealer shall remove any notice in the car in regard to Federal inspection.

Unjustified rejection and poor delivery probably are among the most likely violations. If a car of produce is received and the market price has fallen and the dealer wants to escape taking the car, he may fix up some excuse. If he really forces you to grant an allowance and you report the matter to our Department for investigation and we find that he had no just cause for rejecting, that you had delivered the fruit exactly in accordance with the contract, the terms of sale, the Department can suspend his license and issue a reparation order stating how much he should pay you. That order is not collectable by the Department, however, but can be taken into court and enforced. The law provides that the court shall recognize reparation orders issued by the Secretary of Agriculture.

The question has risen as to whether after you have granted an allowance you have not entered into a new contract, and therefore cut off your right to reparation. The view of our Department is that you have not done so, because you have really been forced to grant the allowance against your wishes. It is assumed that when you do so, if you really feel that your shipment is in accordance with the specifications you probably cannot sell to some other dealer in the market, as they are all provided, and it wouldn't pay you to ship to another market, and the best thing to do is to give him an allowance, or release it to be sold on consignment, which might not even be as well. So we come to your relief and will be glad to handle such cases.

It is also encumbent upon the shipper to ship exactly in accordance with the terms of the contract, not fix up any cars, make them look good in one part and not in another. I don't mean that you would do that, but that has been done in more than one instance. It is very important, though, that the terms of the sale be specifically stated. If a broker sells your fruit he should issue a confirmation of sale and obtain the signature of the purchaser. In some states it has been held that a confirmation of sale signed only by the broker will be binding on both the buyer and the seller, provided it is clear that he was really the agent of both. We would have to prove that he was the agent. So the safest way is for him to get the signature of the purchaser. It certainly will aid in correcting these things if shippers would insist on that. Then you have an exact record as to the terms of sale. Besides that, the wires between the broker and the market and the shipper in the field should state specifically the terms of the contract, should identify the shipment, and should state the price specifically, should describe the quality of the goods to be shipped.

There are some phrases that are used in wires that will cause difficulty if they are used such as "Beautiful car," or "good quality," or "fine car," or "like the last car," or "large stock." Those are indefinite terms. Even No. 1 doesn't necessarily mean U. S. Grade No. 1, or "our best quality," or "sound car," "sound potatoes," or "sound apples." There is a difference of opinion as to how many could be unsound and still pass as sound. So we advise that you be very definite in the description, because if a car is rejected and it does not fill the specifications, of course, the department cannot bring any relief. Furthermore, if the car is rejected and there was no enforcable contract, no meeting of the minds between the buyer and the seller, you would not have a contract that could be enforced. So it is very important that the contract be an enforcable contract.

The statutes of fraud and the uniform sales act, of course, apply, and will be recognized in the interpretation of this law. I might also mention that it is important that the car be shipped at the time specified if the buyer does specify when the car shall be shipped, that you shall provide the character of container that is specified, provide the grade specified, etc. The fact should not be overlooked that this law does not take from any one the right to contract. You can put in as many terms of the contract as you desire. You are absolutely free to make your contract. In the case of F. O. B. or delivered sale, of course, we have to take into consideration when the title passes. That depends to some extent on the laws of the different states. In some states where you make a sale F. O. B. and then ship the car in your own name or to notify to draft attached, it has been held that the title does not pass until he has paid the draft. In other cases it has been held that the title has passed at the point of shipment. It depends on the exact circumstances of the case and the law of that particular state.

Of course, we need to take into consideration in advising these cases whether certain defects at the point of delivery existed at the time of shipment or developed in transit. It is quite an advantage, of course, in having the Federal inspection before the car is shipped, or in case of dispute of an inspection at the point of delivery, and we hope that our service can be expanded so that we can provide inspection service wherever it is needed. As you know, a great many markets now are not provided with such services.

In connection with the filing of complaints, the law provides that if you file a complaint for a reparation, that is, for damages caused by failure of the other party to live up to his contract, such a complaint must be filed within nine months from the time of the cause of action accrued, the general complaint to be filed any time within two years after the sale. It is required in here that all records be kept for at least two years so they will be available.

In filing complaints the department has provided a form to be used. However, it is not absolutely necessary that our form be used. The important thing is to state your case clearly and furnish such a statement in duplicate so that one copy can be forwarded to the party you are complaining against, giving him an opportunity for an answer. Copies of all papers relating to the transaction should be furnished in duplicate so that if necessary, a copy of the papers can be forwarded, that is, it is essential that they be forwarded with the complaint, and all original papers, of course, should be kept available in case they are needed at the hearing.

If the person complained against does not settle with the complainer, or does not satisfactorily answer the complaint, he is entitled to a hearing. A hearing will be ordered by the Secretary at that time. Both parties can be represented by attorneys if they wish, and the matter can be threshed out. The point is that the Secretary or his representatives must satisfy themselves as to the merit of the case, because considerable power has been lodged in the Department, as you will see, in giving the Secretary authority to suspend the license, and certainly, a license will not be suspended without our being absolutely sure that it is the thing to do.

On the other hand, if it does seem necessary, of course, the order will be issued, the facts will be published. This law has been provided to correct evils, evils which clearly exist at various points in the handling of perishables, and with that in mind, we intend to enforce the law very strictly and investigate the facts, realizing that the sooner we bring some of these things to a head the sooner we will have the difficulties corrected.

MR. LEO COHILL: Supposing I sell two or three cars of apples and fail to deliver and they charge me—you might say I overestimated the crop and on account of hail or storm part of the apples were knocked off.

MR. EVANS: If that sale is to go into interstate commerce you could be held liable under the act. You can protect yourself, however, by putting certain provisions in your contract that under certain conditions you do not need to deliver.

MR. WILCOX: I don't believe anybody could be held in case of hailstorm or damage, because all contracts, even manufacturing contracts, have a sort of a general provision that if you are unable to make delivery through some act of God or nature, that the contract is void to that extent.

MR. EVANS: That is true, acts of God would excuse you. But if you overestimate your crop I don't think that would fall under that heading.

MR. EVANS: I might state that the Produce Agency Act is still in effect. This new act did not do away with the Produce Agency Act. There will be some instances where action could better be taken by the Department under the Produce Agency Act than under this act, although I rather feel that the suspension of a license is more serious than a hundred dollar fine or something of the sort.

PRESIDENT ALLEN: I am sure we all appreciate Mr. Evans coming and explaining this new law to us.

At this time we have with us the President of the Indiana State Horticultural Society. We will be glad to hear from Mr. Dyer.

MR. JOHN NAPIER DYER: Mr. President and Members of the Horticultural Society. I am going to try to make two speeches in the time limited to one. In the first place, I want to say just a word about the National Horticultural Council, an organization that came into being a year and a half ago for the purpose of taking care of the economic problems of the fruit and vegetable industries that are national in character.

It has always been amazing to me, out of my experience in business before I became a farmer and a fruit grower, that farmers and fruit growers have so little appreciation of the need of compact organization. You can take almost any industry in this country and there is some spokesman for the industry, somebody that can say the last word with respect to their problems, which deal with their economic factors. However, this National Horticultural Council is an institution that has proven its worth. It has a definite function to perform, and I will just cite two instances. Last year we realized that the Oriental peach moth was a serious menace to the peach industry. I talked to Senator Jones, of Oregon, in Washington last year, and he said, "Well, that is so far away from us that it doesn't concern us. I believe it is a lot of money you are asking for, $150,000 to deal with this problem."

I said, "But do you grow pears in Oregon?"

"Yes."

"Do you know what it would do to your pear industry in Oregon? It would wreck it."

He said, "That puts a very different complexion upon it," and he was for the appropriation to provide adequate funds to meet this situation.

When the recent tariff bill was before Congress I think few of the vegetable growers of the eastern shore know how effective the work of the National Horticultural Council was in getting adequate tariff protection for your vegetables, which has certainly been of great benefit to you. If it hadn't been for the fact that the Council had a man on the job in Washington for a couple of months before the committees of the House and Senate dealing with these problems, I very much doubt if you would have had adequate protection for your fruits and vegetables. It just went to show the force of an organized effort in doing things.

Now, at the meeting of the National Horticultural Council in Washington on the 28th, it is proposed to try to get the horticultural societies of this country headed into this

National Horticultural Council in order that they may have a national spokesman. You as an organization in Maryland have very little national force. But if you go there through an organization that is builded to deal with national problems, you probably will get a very respectful hearing.

We hope this Society will be represented at this meeting in Washington. Now I want to talk to you about apple advertising. The fellow who increases his advertising appropriation in these times when business is hard to get is usually the fellow that gets more than his rightful share.

This problem of selling apples has just simply degenerated to this, that we have allowed to grow up all around us influences that take away our apple consuming business. The fellows in the citrus industry in California and Florida are spending millions of dollars in advertising their products. Through the power of advertising in a very brief space of time, bananas grown down in Central American countries are sold in competition with our fruits as a fruit, and they have taken away enough of your apple business to make the marketing of apples a serious problem in this country. If it were not for the fact that we have been able to find a large export business for apples, even in this year of 1930, we would have been very hard pressed to have found enough people in this country willing to eat the king of fruits in order to consume the crop.

The apple used to be on the top of the pile. It was the only fruit commonly consumed in all homes, consumed by old and young, generally approved and recommended by physicians and dietitians, and it was the only fruit known to have healthful qualities. There has been no change in the apple itself. It looks just as good, it tastes just as good, it is just as good for the health, and physicians and nutrition experts approve and recommend it more than ever, yet, in spite of these facts the apple has lost widespread popularity. Let us see the reasons.

Here is one of them. "The Glow of Health"—the California Growers' Exchange advertising. Sunkist California oranges; millions of dollars spent. "Here it is. Drink it" —the Florida Citrus Exchange.

Here is another one, Sunmaid Raisin Growers of California. Here is our old friend bananas. You know, I have been a firm believer in the justice and the fairness and the right of putting a tariff on bananas.

The banana advertising five years ago convinced the public that the banana has health giving qualities also. Since this advertising started banana consumption has increased 18 per cent and prices 24 per cent.

Here are the California Walnut Growers doing a wonderful work. There was a time when Walnuts were bought around Christmas time. You buy them all through the year now.

Here is this sauerkraut juice that has come into the picture recently. Some 4,000 hotels place it No. 2 on their list of best selling dishes. And a few years ago you never heard of sauerkraut juice.

Here is another one, cranberries. When you and I were boys cranberries came with the turkey at Thanksgiving and now cranberry sauce is served twelve months in the year.

The Confectioners' Association is teaching us how to eat candy through the power of advertising.

The canners' group is going to launch an advertising drive to teach people to eat more canned goods. Nearly all food advertising with the health appeal has been done at the cost of the apple grower. He has really paid the bill, because the other gains have been his loss. Each campaign has done its share in diverting the attention of the public from its old friend the apple. They are constantly reading about the health values of other fruits and vegetables and even candy.

This downward trend may be further emphasized by the new contemplated campaign in defense of the other fruits or other food products with a health appeal.

This plan of advertising has three distinct advantages. It is fair because each grower has a large or small automatic amount to pay, pays his proportion according to the size of his crop. It is economical because it eliminates the collection charge that would be the minimum fee of any agency, 15 per cent. It is efficient because 100 per cent of the money will go into advertising itself. It is powerful. Recently when Virginia had its horticultural meeting, they assessed their growers three cents a barrel in order to get a fund for getting markets in Europe for export business to pay their foreign advertising expenses. It is a wise move in the right direction.

Just think over these possibilities. The approximate annual apple crop is 96,000,000 bushels, or 12,000,000,000 apples at 125 apples to the bushel. With 120,000,000 people in the country, this leaves but 100 apples a year per capita, or about a quarter apple per day per person; if each person in the country were to eat one apple a day—well, that is just too much. You couldn't visualize that. It puts you out of your range if you you thought it, but if you could increase the consumption of apples, say to one apple a day per person instead of a quarter of an apple a day per person, the consumption of apples would be so great we would be planting new trees all over the United States.

Modern merchandising of apples is just as important as good advertising. It is absolutely necessary. Those, I think, are the principal features of this thing. Now, here is the plan of this Apples for Health organization in a nutshell. It proposes that the growers shall pay for their containers one-quarter of a cent per bushel more than they have been paying in the past. In other words, the container manufacturers have agreed to become the collection agency for an apple advertising fund. They will bill you for your containers at a price that will permit of their paying into this advertising fund a quarter of a cent a bushel. Last year it was tried by billing the buyer of the container one cent a bushel and it didn't work. The shortsightedness of people in the fruit industry as well as in many other industries is rather alarming, and when you can see this picture of the possibilities of increasing the consumption of apples by a well directed advertising campaign, certainly, no man who has the welfare of his business at heart would hesitate upon paying a quarter of a cent a bushel for advertising the apple.

The peach grower can come in on the same plan under the same program. But the point is that you fruit growers must agree that these container manufacturers shall be permitted to do this. They will take it out of you sort of by a painless extraction method and put it into this advertising.

Now, advertising is going on. Station WENR in Chicago is putting on an apple advertising campaign from 6:30 to 7, Central Standard time, on Saturdays as an example of what an advertising campaign over the radio can be. Radio advertising has so upset all of the calculations of those in the advertising business. Therefore, possibly we can advertise over the radio and do a lot of good work.

At the present time we are using what they call a clip sheet. You will find it in many magazines where they are publishing stories about the apple, its food value, new ways of consuming apples, all kinds of stuff that comes in under the direction of Dr. Bernard, who was formerly the Health Commissioner of Indiana, and who is the head of President Hoover's Child Health Commission, which recently met in Washington, a very influential and forceful man, who has taken charge of this National Apple Institute, and who is putting out this clip sheet which is a part of the advertising campaign of Apples for Health.

There is a resolution I am going to give to your President and I will ask him to present it to you through your ordinary channels if he will and let you discuss it, as to whether or not you want to join in this campaign to make apple advertising effective at a cost so small to the grower that it really becomes almost infinitesimal.

I thank you, Mr. President. I bring you the greetings of the Indiana Horticultural Society.

PRESIDENT ALLEN: Is the Auditing Committee ready to report? Mr. Dwight Walker is Chairman.

MR. WALKER: Mr. President, we have looked over the books of the Secretary and Treasurer and found them to be correct.

Mr. Lee Allen: I move the report be adopted.

. . . The motion was duly seconded and carried unanimously . . .

President Allen: I want to appoint at this time Mr. Henry Whiteford as the Representative of the Maryland State Horticultural Society in the Maryland Farm Bureau Federation.

We will now have the report of the Nominating Committee. Mr. E. D. McCain.

Mr. McCain: Mr. President, the Nominating Committee has nominated for the year to follow the following officers:

G. S. L. Carpenter	President
W. Earle Withgott	First Vice-President
Raymond C. Hanson	Second Vice-President
G. Rust Canby	Secretary-Treasurer
A. F. Vierheller	Assistant Secretary

Executive Committee:

Albert Allen
E. D. McCain
E. C. Auchter
H. C. Whiteford
W. Earle Withgott
J. A. Cohill
Frank Hanson
G. Hale Harrison
A. L. Towson
J. Walter Englar

Membership Committee:

A. F. Vierheller
W. B. Moore
Dwight Walker
George C. McClain
H. C. Whiteford
R. R. Walker

President Allen: What is your pleasure?

Mr. Funk: I move the nominations be closed and the report accepted.

. . . The motion was duly seconded and carried unanimously . . .

President Allen: We will now have the report of the Resolutions Committee. Mr. J. Walter Englar is Chairman.

Mr. Englar: The Resolutions Committee brings these resolutions before you without any recommendations. Resolution No. 1:

"*Whereas,* the growers have experienced considerable delay and annoyance insecuring the Export Form Certificate for apples under present arrangements, therefore be it

"*Resolved,* that the Horticultural Society appoint and authorize a committee of five to arrange with the State Board of Health and the State Department of Markets, for the simplifying of the issuance of the Export Form Certificate on shipment of apples. Be it

"*Further Resolved,* that the Horticultural Society express its appreciation to the State Board of Health for their interest and assistance in making the chemical tests necessary for the issuance of these certificates."

. . . It was voted on motion made by Mr. Hanson and duly seconded, that the resolution be adopted . . .

MR. ENGLAR: Resolution No. 2

"*Be It Resolved,* that the Horticultural Society express its appreciation to the State Board of Health for their interest and assistance in making chemical tests necessary for the issuance of these certificates."

. . The motion was duly seconded and carried unanimously . . .

MR. ENGLAR: No. 3.

"*Whereas,* the annual report of the State Horticultural Society has not been reaching the members until mid-simmer, after important orchard operations have been completed, be it

"*Resolved,* that we send up the most urgent request to those having this matter in charge, to reduce this delay to the minimum."

MR. MCCLAIN: I move the adoption of the resolution.

. . . The motion was duly seconded and carried unanimously . . .

Resolution No. 4

"We, the members of the Maryland State Horticultural Society, meeting in Baltimore January 7, 1930, wish to express our appreciation to Governor Albert C. Ritchie for his sympathetic appreciation of the problems of our industry.

"Particularly at this time, with work on the construction of our new Horticultural Building at College Park about to be started, do we want to thank him for his efforts in helping us secure the funds necessary for the construction of this building.

"Realizing the Governor's sincere interest in our problems in the past, it is with added confidence that we approach him for assistance again in the matter of securing funds to purchase mechanical equipment and technical apparatus for the investigational and teaching laboratories, which are authorized in the new Horticultural Building.

"Among the larger laboratory needs, are machinery for canning crop investigations, fruit and vegetable packing, storage studies, and the technical apparatus needed for same.

"All of the above, we feel, are urgently needed and should be ready for installation immediately upon completion of construction of the building in the fall of the present year, in order that the greatest possible benefit will accrue to the entire horticultural industry.

"Therefore, Be It Resolved, that we respectfully ask Governor Ritchie to recommend in his supplementary budget to the present Legislature, the sum of Thirty Thousand Dollars for the specific purpose of providing mechanical equipment and technical apparatus needed for the investigational and teaching laboratories in the new Horticultural Building."

MR. McCLAIN: I move the adoption of the resolution.

. . . The motion was duly seconded and carried unanimously . . .

MR. ENGLAR: Resolution No. 5.

"Resolved, that we extend a note of thanks to the management of the Lord Baltimore Hotel for the many courtesies extended to us in the success of our meeting."

MR. TOWSON: I move the adoption of the resolution.

. . . The motion was duly seconded and carried unanimously . . .

MR. ENGLAR: I have this other resolution here that doesn't come from the Resolutions Committee, and I am going to read it without any recommendation and you can act on it as you see fit.

Resolution No. 6:

"*Resolved,* that the Horticultural Society endorse the plan to increase apple consumption by national advertising and publicity as outlined by Apples For Health, Inc.

"We favor the plan of cooperation on the part of the container manufacturers in collecting the fund for the apple campaign, and we hereby state that we will purchase our containers only from those container manufacturers who lend their full cooperation to the national apple campaign in the gathering of this apple advertising fund.

"We understand that the proposed plan for the coming year is to add the small amount of 1/4 cent to the cost of each basket (3/4 cent per barrel), which amount is to be included in the price of the apple container. We believe this amount is so small that every progressive grower will gladly approve, and yet, the total will be large enough to assure excellent results for the apple industry.

"We understand that a list of all container manufacturers who have signed an agreement to put this plan into effect will be furnished to the growers so that they can buy their containers from these manufacturers who are cooperating in the plan to put the apple growers on a permanently prosperous basis."

MR. WILCOX: I would like to know if it is intended that all the money collected on the barrels is to be used for advertising in the United States. I don't think it is fair to collect three-quarters of a cent per barrel on the stuff that is for export.

MR. DYER: There won't be enough money in the barrel advertising at a quarter of a cent per bushel to go very far in foreign advertising.

MR. WILCOX: The money collected on foreign shipments will be used to advertise in this country?

MR. DYER: They are assessing them three cents a barrel in Virginia to provide a fund for advertising Virginia apples, and also to obtain a resident commissioner for Virginia apples in Europe, but at three-quarters of a cent per barrel it wouldn't be possible to appropriate that money for foreign advertising.

MR. WILCOX: I don't see why the barrels are included.

MR. DYER: Because some growers use barrels, for instance, New York and New England apples that do not go into export trade.

MR. WILCOX: I don't see why export trade should come under this.

MR. DYER: That could be eliminated. This is not contemplated to take care of the export barrel business only apples for domestic consumption.

MR. ENGLAR: Do you know definitely if Virginia has entered into this arrangement for home consumption?

MR. DYER: I have a conference with Governor Byrd on Saturday which I think is going to terminate very favorably.

PRESIDENT ALLEN: Does that refer to boxes too?

MR. DYER: The box apple growers in the west have agreed to match dollars with the middle western and eastern producers on the money that is raised. They have a very tight organization out there, and they can collect from the box producers a sum such as they have been doing for some years. They have agreed definitely that they will put just as many dollars into this advertising campaign fund for the general advertising of apples as the middle western and eastern growers will put into the same plan.

MR. COHILL: In view of the fact that this matter has just been presented to the Horticultural Society, the members, I am sure, would probably like to give a little thought and consideration to the proposed plan. When we pledge ourselves here as members of this Horticultural Society to do a certain thing and that certain thing involves finances individually coming from these growers, it seems to me that the growers themselves probably should be more fully acquainted, or at least, have time enough to think over the situation, so I move you, Mr. President, that the incoming officers or the Directors of this Association first have the opportunity to approve of this resolution.

. . . The motion was duly seconded . . .

MR. R. R. WALKER: Mr. President, it does seem that there should be something done by the apple and peach growers of this country to further the consumption of apples and peaches. Certainly, the citrus fruit industry has done wonderful things in the way of advertising, and have made a success of their advertising. It seems to me to be a very little amount of money to ask the fruit growers to put into a scheme to benefit the consumption of apples and peaches and other things. Florida and California have certainly spent thousands and thousands of dollars and have had a good deal of return for their advertising money. I believe we would get a considerable return for any money we may spend in advertising.

I would like to see the thing discussed here but we certainly ought to do something to cause people to use apples.

MR. ENGLAR: I do feel that we ought to spend just a few minutes with this group as we are gathered here and let each one who has any convictions on the matter express them as quickly in the next few minutes as possible, just so the Executive Committee will know the feeling of the members when they come back. But I think it is wise to leave it in the hands of the Executive Committee to settle it finally.

PRESIDENT ALLEN: Is there any further discussion?

MR. COHILL: Just what method would be used in the collection of your funds on barrels? In the majority of cases the barrels are made by the growers themselves.

MR DYER: I attended the meeting of the cooperage manufacturers' association in Memphis. They are very anxious to cooperate with the apple grower in raising this fund and are eager to do their share in getting the money from the grower. They say if the grower is willing to cooperate with the container manufacturers and are willing to pay the price for the barrels that will permit the extraction of this three-quarters of a cent a barrel for domestic shipments, because the foreign shipments were not contemplated in this arrangement, that the container manufacturers will put it in their price. It eliminates any collection cost, it is the simplest method you can get for collecting an advertising fund. I don't think anybody will deny the need for apple advertising.

MR. GOLD MILLER: How many members do you have in the Apples for Health?

MR. DYER: Apples for Health is just an organization that is composed of men who have contributed to this apple advertising campaign. Men don't contribute voluntarily. If you can get this advertising campaign fund from apple producers by the painless extraction method you have done something you will never be sorry for.

MR. ENGLAR: I would like to ask what caused the change from three cents to three-quarters of a cent?

MR. DYER: Because the other basis was voluntary and they wouldn't contribute, but by this method of adding it to the price, enough will come in to raise approximately $600,000 a year for apple advertising.

MR. MCCLAIN: What is the provision for peach growers? Some buy a great many more baskets for peaches than apples.

MR. DYER: We haven't gotten to the peach growers yet, we are dealing only with apples, but we think the peach grower will be glad to come in under this same plan. If he doesn't, he doesn't pay on the peach baskets.

MR. ENGLAR: I didn't understand that Mr. Dyer answered Mr. Cohill's question very satisfactorily, as to how he is going to collect from the individual grower that makes his own barrels.

MR. DYER: That is to be done by the cooperage fellow who sells him the cooperage material.

PRESIDENT ALLEN: There is a motion before the house. The motion is that in view of the fact that it would probably be desirable to give this matter thought before taking any definite action, that the matter be left to the Executive Committee to decide.

MR. COHILL: The thought I had in mind was this, that the membership would be more fully acquainted with the plan by letter by the incoming President and the Executive Committee and that would give them time to think the thing over a little more thoroughly.

MR. NOFSINGER: And the Executive Committee will have power of joining the organization, is that it?

MR. COHILL: Yes.

MR. WALKER: I think this is a good method of raising the money. I think this should be taken up pretty soon. We really need it; we need something to advance the consumption of apples.

MR. HANSON: I suggest putting this motion before the house, that we try and take it up now. If you continue putting it off from one year to another you never yet anywhere. We ought to get at it and do it.

MR. GOLD MILLER: We ought to fix this thing so a man can't buy a barrel without paying.

MR. LEE ALLEN: I would like to ask one question. Suppose a fruit grower in February or March buys several thousand baskets and he is a peach and apple grower. He buys these, we will say, all for peaches or all for apples. Peaches are shipped in round bottom or stave tub baskets the same as apples. How about the grower who uses 10,000 baskets of this kind for apples and peaches both?

MR. DYER: I think that is such a simple matter between the grower and the container manufacturer that there won't be any question about it. He could state what containers would be used for apples and pay the additional cost for the apple containers.

MR. ALLEN: In other words, it is a matter of general agreement between the grower and his container manufacturer.

PRESIDENT ALLEN: The motion is still before the house. Is there any further discussion?

MR. WILKINSON: The apple growers might as well make up their minds to contribute to advertising in some way or other or go broke. You know we never want to do anything to help ourselves until we get to the place where we have got to do things. Why hesitate to contribute the pittance to this great cause?

MR. MILLER: In the long run we have to look on these things as investments, and no people in the world believe in investing and advertising as much as the people in the

United States. But we haven't done it in the past. We have to wake up and start now. I believe that a united front will give us a great deal more advertising for the same money and will give us a great deal more money for the same effort than we can get in any other form. It seems to me that $600,000 ought to do an awful lot of advertising and it is up to us to put it up where it can be gotten at.

PRESIDENT ALLEN: Gentlemen, is there any further discussion? There is a motion before the house and it is that it be left to the Executive Committee to decide.

PRESIDENT ALLEN: I would like to express one personal opinion about this. The Virginia Horticultural Society has had its meeting, the New Jersey Society has had its meeting, and several others, and I am sure Virginia took no action at its regular meeting. I think the thing is we are all willing to go along, but we are not quite certain everybody else is going to do the same thing, and that has been the trouble in the past.

MR. COHILL: At the present time there are at least three or four different organizations that have advertising schemes. It is up to the officers of this organization to pass resolutions we are really going to act upon, not just get up and pass a lot of resolutions and not back them up.

MR. DYER: You talk about other advertising agencies and other advertising schemes. There is just one organization in the United States that is competent to deal with this advertising problem. You say Apples for Health has been in existence for five years. It has been doing everything within its power to try to arouse in the minds of apple growers the need for apple advertising, and the apple grower has laid down on his responsibility and has refused to contribute to this apple advertising fund. There isn't any other organization trying to build apple advertising except Apples for Health. It is the apple advertising organization of the grower; the personnel of the organization is known to all of you. It is composed of the leading growers of apples in the United States. It is headed by men who are national in their activities. It is the one organization that can deal with this problem for you. What we are trying to do is make it possible for every man to help himself whether he wants to or not, by committing himself to a policy that will enable him to contribute this quarter of a cent a basket without his feeling the contribution. If you allow a man's apple advertising contribution to be left to his own discretion, at the end of the season, whether or not he has had a bad year, he will not pay it, and we are not going to have any good years in the apple business for several years to come, believe me. Therefore, this is your opportunity.

PRESIDENT ALLEN: Are there any other resolutions to be presented or any motion concerning this resolution?

MR. COHILL: This is the resolution now, that we approve of a plan of apple advertising, the Maryland Horticultural Society go on record as approving of a plan of advertising apples.

MR. ENGLAR: I think every member of this Society present this morning is in sympathy with the resolution, but it is just as it has been for the past five years. But if West Virginia doesn't vote for it, and Virginia does not vote for it and they have already had their meeting, we are going to be mighty weak kneed even though we do pass this resolution. That is the only reason we hesitate.

MR. DYER: I assure you, the container manufacturers will not attempt to collect this unless all the apple growers in the country go into it.

. . . The motion was put and carried with one dissenting vote . . .

PRESIDENT ALLEN: We will hear from Dr. Symons on the drought relief situation.

DR. THOMAS B. SYMONS: I mentioned to your Chairman the possibility of your being familiar with the possibility of the availability of drought funds this coming spring. Obviously, a number of the fruit growers have had a severe injury and as such they should be in a position to receive such assistance as the government can render from the drought relief fund. As you know, Congress has made a provision for the 28 States affected, and I have no doubt that a reasonable proportion will be allocated to Maryland with the regular restrictions that necessarily follow a relief measure. Obviously, the fruit man should be entitled to the same consideration that the corn and wheat grower receives and the others who have suffered from the drought. The regulations are now being formulated. The fund will be as a loan to the farmer or fruit grower as stated in the bill, for the purpose of buying seed, fertilizer and feed for work stock. There has been some discussion even preliminary to the appropriation of the act by Governor Byrd and others on the drought relief committee, that provision be made for the purpose of buying spray material. The Secretary of Agriculture has been given, in the language of the act, discretionary power to a limited extent, and I believe that that will be extended to the purchase of spray materials, but I am not certain. At any rate, it would seem to me that if any one needs funds badly for operating expenses this spring due to losses sustained by the drought, that they should be available from the government fund upon application made by your county drought committee, and then call upon our office in Washington. Of course, it goes without saying that that money is a loan, that they put a lien upon the crop for its return. The cost has not as yet been announced. The grain loan has been around four or five per cent. The period has not been determined; one or two years. Your committee and officers will be pleased to consider applications from any fruit grower for these funds. Aside from the drought fund, it has been the policy of your state committee to try to ascertain the losses sustained, the need, to set up a State Drought Loan Corporation, and letters are now out to leaders in the state describing the stock in this corporation. The Clearing House Association of Baltimore has agreed to put up $25,000 when we have raised $25,000 from individual subscriptions for this stock. The money we raise will be available for loans to needy farmers and fruit growers upon conditions that are not necessarily following the drought provisions, but simply the provision of a worthy request backed by the experience and a reason for the expectancy to pay the loan in a reasonable time.

That, Mr. Chairman is the status of the loans, both the drought and state, at the present time, and I feel that we should be able to supply the need of these fruit growers from the government fund at least, and I am in hopes that we will have some state funds to aid similar cases.

PRESIDENT ALLEN: At this time we are going to call on Dr. E. C. Auchter, who will speak to us on "The Condition of Our Fruit Upon its Arrival at European Markets. Its Effect Upon Net Returns and Extension of Our Export Trade."

Dr. Auchter described the handling of American apples in some of the English markets and the methods of sale by auction. He cautioned the growers to rack export barrels well while packing, so as to insure a tight pack, and also advised that fruit be more carefully picked, handled and graded.

PRESIDENT ALLEN: Gentlemen, there is a saying that our best friends are those who tell us of our faults and help us to correct them. We thank Dr. Auchter for doing that.

Does any one have anything to bring before this Society before we adjourn? If not, I declare the meeting adjourned.

. . . The meeting adjourned at twelve-fifty o'oclock . . .

REPORT

of the

TWENTY-FOURTH ANNUAL MEETING

of the

Maryland Crop Improvement Association

Wednesday and Thursday

January 7-8, 1931

BALTIMORE, MD.

The twenty-fourth annual meeting of the Maryland Crop Improvement Association was held in the Lord Baltimore Hotel, Baltimore, on January 7th and 8th, 1931. The programs presented were as follows:

WEDNESDAY, JANUARY 7, 1931

10:00 A. M.—President's Address—Mr. Matt Harding.
10:10 A. M.—Alfalfa in Rotation—Professor J. E. Metzger, University of Maryland.
10:40 A. M.—Pastures—Mr. J. B. Abbott, Agronomist, National Fertilizer Association.
11:20 A. M.—Emergency Field and Feed Crops—Professor W. B. Kemp, University of Maryland.
11:50 A. M.—Discussion.

THURSDAY, JANUARY 8, 1931

9:30 A. M.—Methods of Corn Fertilization—Prof. George S. Schuster, Agronomist, University of Delaware.
10:10 A. M.—Elements of Successful Farming—Dr. S. H. DeVault, University of Maryland.
11:10 A. M.—The Seed Corn Situation—F. W. Oldenburg, Extension Agronomist, University of Maryland.
11:40 A. M.—Committee Reports.

In connection with these meetings the State Corn Show was held as usual. Although Maryland farmers had suffered the worst drought on record, the number of corn entries and the quality of the corn were surprising to most spectators. In every class the exhibits were of excellent quality. The total number of corn entries was 109, which compared favorably with the number on exhibition in normal years. Soybeans and potatoes were also on exhibition.

For white corn, the sweepstakes was won by Ira V. McKenzie, of Cumberland. For yellow corn, Noah Arbaugh, of Westminster, won the sweepstakes and also the Grand Champion trophy, which is a silver water pitcher.

The Maryland Vegetable Growers' Association co-operating, a number of classes were again added to the premium list for potatoes.

The potato entries were open only to seed potatoes certified by the Maryland Seed Certification Board. The classes added were for (1) Irish Cobblers, (2) Rural Russets, (3) Any other variety of potatoes, (4) Sweet potatoes.

At the annual business meeting held during the second session the following officers were elected:

President—IRA V. MCKENZIE, Cumberland, Maryland.

Vice-President—NOAH ARBAUGH, Westminster, Maryland.

Secretary-Treasurer—F. W. OLDENBURG, College Park, Maryland.

Mr. McKenzie was also delegated to represent the Association as a member of the Executive Committee of the State Farm Bureau Federation, and Mr. Dan Pearce, of Sparks, to represent the Association on the Board of Directors of the Agricultural Corporation of Maryland.

TREASURER'S REPORT

Maryland Crop Improvement Association

January 1 to December 31, 1930

RECEIPTS

Balance, January 1, 1930 (Including $2.00 outstanding checks, 1928)	$ 41.00
Checks outstanding, 1930	3.00
Membership Dues	63.00
Appropriation Agricultural Society	308.52
	$415.52

EXPENDITURES

Torsch-Franz (Ribbons)	$ 13.52
Hennegan-Bates (Trophy)	18.00
Labor, Corn Show (Reimbursement J. E. Metzger)	4.00
George Schuster (Judging Corn Show)	16.58
M. M. Stewart (Farm Bureau Dues)	20.00
M. M. Stewart (Medals for Corn Show)	15.00
M. T. Johnson (Stamps)	2.50
M. T. Johnson (Stamps for sending out program and premium list)	3.00
M. M. Stewart (Medals for 1931 Corn Show, check necessary in advance)	15.00
Premiums (Corn Show)	254.00
Cash in Bank, December 31, 1930 (Including $5.00 outstanding checks)	53.92
	$415.52

Baltimore, Maryland,
January 8, 1931.

We, the undersigned, have examined the books of the Treasurer of the Maryland Crop Improvement Association, and have found them correct.

Auditing Committee,

E. K. WALRATH,
H. R. SHOEMAKER.

PRESIDENT'S ANNUAL ADDRESS

By MAT HARDING, Cambridge, Md.

Members of the Maryland Crop Improvement Association, and friends:

This meeting is the 24th annual assembly of the Maryland Crop Improvement Association. For an organization to function continuously for nearly a quarter century means that it must have had some real reason for its existence.

The rise and the importance of an organization can best be measured by its activities. In fact, the scope of its work is the best measure of the success of any organization. It does not seem out of place, therefore, for me to review briefly some of the accomplishments of this group with the purpose of furthering a work that has been worthy and valuable to its members.

The early work of the group related largely to the promotion of a State-wide corn and grain show and to the discussions on how to improve the corn crop. In both these fields valuable work was accomplished. The corn show, with only the interruption of the World War, has grown to the point where for quality it has few equals anywhere in this country. Corn yields during the quarter century have increased by more than 12 bushels per acre. This is a figure approaching the 50 per cent increase. The two outstanding items of improvement represented by this increase are the improved quality of the seed used and the management of the crop, especially from the standpoint of soil fertility.

No subject has interested our members more than has the grading and the registration of the cereal grains. Our Association in these matters as in other things has taken the attitude that no position for the farmer is tenable unless it is founded upon facts. The truth about our products when put on the market, and this truth backed by the guarantee furnished by the impartial inspector, has aided us in the marketing and distribution of seeds of high quality and merit to an extent possible only through organization.

The grading of grains by Federal and State agencies has been beneficial and has placed the emphasis on the kind of product we like to grow, namely, the grade one product. In like manner the registration of varieties of pure and improved farm crops, seed supplies and of pedigreed seeds has been in progress for 12 years. The growth of this work has been steady and effective. The seed sales have not been extremely large but they have been sufficient to give wide distribution to the best kinds. As an example, one may refer to the Mammoth Red wheat which was first distributed in 6 bushel lots to each county in 1922. This variety is now grown on more than three-fourths of the valley lands and on about 90 per cent of the coastal plains.

In a way our Association has served as an adjunct to the Maryland Experiment Station. The Experiment Station is in position to develop and test the yielding qualities of new selections and hybrids, but it has no means of promoting the use of these new and better kinds of seeds. It is in this relation, by growing and marketing these new and improved varieties and selections that the Crop Improvement Association has performed its most valuable service.

Our organization has been active in the grain marketing problem also, and has urged and supported all movements aimed at orderly and efficient marketing. Many of these efforts are still in their infancy and one can not yet say how successful they will be.

In closing, let me say that the Maryland Crop Improvement Association has lived and prospered through the efforts of a number of people of this State, who in addition to their earnest desire to maintain and perpetuate the best possible on their own farms, have made an honest effort to improve the agriculture of the State by giving freely to others the benefit of their long and successful efforts.

We believe that this organization has performed a needed service and that it deserves the whole-hearted and unstinted support of the farmers of our great State.

ALFALFA IN ROTATIONS

BY J. E. METZGER

There are two ways in which to approach a discussion of the alfalfa problem. One way, apparently the usual way, is in terms of causes of failures (the negative approach). The other way is to proceed from the standpoint of known successful (the positive approach) methods. When in doubt, it is perhaps better to use in part both methods. The negative approach, however, will be used here only for the purpose of stating the problems—the solutions suggested will be direct rather than by contrast.

The unsatisfactory situations in alfalfa growing in Maryland may be classified as follows: (a) Failure to secure good stands; (b) good stands but unsatisfactory growth; (c) the duration of the stand is too short; (d) loss of stands by winter killing; and (e) inadequate supplies of alfalfa hay in some years.

Failure to Secure Good Stands

It is customary to attribute the failure to secure a good stand of alfalfa to the possibility that the seed failed to germinate. This may or may not be the difficulty. If it is, it can very easily be verified because Seed Houses are required to label their seed lots as to germination as well as purity if intended for the Maryland market. The grower should always buy the seed lot on the basis of its purity and germination and use this information in determining the seeding rate. If there is any doubt about the quality of a seed lot, write or telephone the State seed laboratory for the desired information.

Even though the seed used is good the stand may not be satisfactory. The soil may be too dry as was the case throughout the 1930 season or it may be too wet as was the case during 1919. Old stands can endure much drought and much rainfall, also, because the root system is well established, but new stands may succumb under the conditions of either extreme of moisture. This, unlike the seed situation, cannot be controlled readily and is therefore the main reason for the subject of this paper.

Many new seedings of alfalfa are thin because the seed was planted too deeply. This is especialy important if the planting is done in late autumn. The Maryland Station tests have shown that it is seldom possible to prepare a sufficiently firm seed bed for summer planting to permit the use of an alfalfa drill. Further, there seems to be nothing to recommend the seeding of an alfalfa crop and for that matter any other crop in a soil that is too dry to germinate the seed. To do so also invites the baking or hardening of the surface of heavy soils by hard rains which usually greatly interfere with and often prevent the young plants coming through the soil. Our best stands from summer plantings have been secured by broadcasting the seed and by pressing them into the surface of the soil with a cultipacker. The ridges left by the cultipacker prevent serious hardening of the surface of the soil also.

Late planting in both fall and spring may be fatal to new stands. In the spring because of hot dry weather and in the autumn on account of the insufficient growth and cover for the winter.

Satisfactory Growth

Satisfactory growth in alfalfa can be secured only on soil that is reasonably fertile. It is too commonly the opinion of people that alfalfa is a good crop for increasing the fertility of the soil. Experimental evidence indicates that alfalfa will maintain a nitrogen supply but will exhaust the soil very rapidly of its surplus of phosphorus and potash. In a total of 1,363 one-acre tests made by the Maryland Station, there were only a very few cases of unsatisfactory growth on the fertile soils, but on the poor soils, 70 per cent of the fields failed to make profitable yields. The evidence is most convincing that the fertility of a soil, if low, must be built up before it is wise to plant alfalfa, and again this is another good reason for the subject assigned to me.

Duration of Stand

Much study has been given to the duration of stands of alfalfa in Maryland as well as in other states. Some of the factors are common to all locations; others seem to apply to certain localities only. Weeds, for example, are troublesome everywhere, and especially so in the eastern half of the United States. One can safely say that weeds are one of the two most important factors in managing an alfalfa crop in this State. Another factor is late autumn cutting and also the pasturing of alfalfa.

Doubtless, the most important factor affecting the duration of a stand has to do with the maturity of the crop at the time of harvest. It has been found that cutting alfalfa at an immature stage produces a high quality of hay, but it also reduces the number of years in which the crop will remain profitable. The best evidence seems to indicate that at least one crop (preferably the first for each season) should be allowed to come into full blossom before harvesting. This will permit the storage in the roots of large quantities of reserve material for the plant to promote its subsequent growth and length of life.

Winter Killing

In sections having severe winters, winter killing of alfalfa becomes a problem of hardy strains as well as one of careful management. The same question is often raised by our growers. It is usually in the form of whether to buy Grimm, or a similar hardy variety, or common alfalfa. There may be some situations in the State such as on the shallow shale soils and on the Appalachian plateau where it is best to use a hardy kind even at a much higher cost but throughout most of the counties, common alfalfa will be equally satisfactory. Most winter killing and heaving is the result of insufficient growth and cover for winter protection. The new stand should go into the winter with eight to ten inches of top growth and the old stand should have at least six inches of top growth.

Inadequate Alfalfa Hay Supplies

On many Maryland farms the production of alfalfa hay has been discouraging at times because the stand has not lasted more than three or four years and the new seeding failed with the result that no alfalfa hay was produced the following year. It is the purpose of an "alfalfa rotation" to avoid just this experience. To use such a rotation, however, involves some changes in the farm layout or field arrangement.

One can normally expect at least two tons of hay per acre from a satisfactory stand of alfalfa. Thus each acre will produce enough hay to feed ten pounds per day for 200 days to each of two producing cows, and a corresponding number of growing animals. This can be used as a guide in determining the number of acres of old stand alfalfa required per farm. For example, for a herd of 24 cows there should be 15 acres in old stand alfalfa, 5 acres in winter barley and new seeding and 5 acres in silage corn—a total of 25 acres in the rotation.

It is usually best to select a sufficient number of acres near the barn, if the land is suitable as to drainage and other factors, for this rotation. By rearranging the remainder of the farm the usual rotation can be practiced but on a smaller scale.

If it is desired to have the alfalfa for three years then five fields of equal acreage are necessary. If the stand is to be maintained for two years (as should be the case on most sandy soils) then four fields will be required. The following outline shows the order of planting for a five-year rotation. In addition, the suggestions as to maintenance of fertility are included.

ALFALFA ROTATION

CROP	MANAGEMENT
Silage Corn	Turn under 5 tons manure. Use 200 pounds of 2-12-6 or 2-8-5 fertilizer per acre.
Winter Barley	Plant 2 bushels of Tennessee winter barley September 20 to October 5. Use 250 pounds of 2-8-5 or 2-12-6 fertilizer per acre.
Alfalfa	Plant 20 pounds of common alfalfa March 15 to April 1. A disc seeder is to be preferred. Cut alfalfa crop about August 20.

Alfalfa	Use 5 tons manure if fall growth is short. Also use 50 pounds of superphosphate with each ton of manure. Apply both in late December or early January.
Alfalfa	Apply 200 pounds of 0-12-5 fertilizer per acre during late winter.
Alfalfa	Apply 5 tons manure before plowing under for silage corn.

A few suggestions and observations regarding this rotation may be pertinent:

1. The fertility measures suggested are for land in a good state of fertility. If the soil is poor, the amounts of manure and fertilizer should be greatly increased throughout the first period (five years) of rotation.
2. Sufficient lime to keep the soil about neutral should be used. The amount to use at any given time should always be determined by one of the several methods.
3. Allow one crop each season to come into full blossom in order to maintain the necessary food reserves in the roots for maintaining the stand. Reduce the annual cuttings to three and avoid pasturing or cutting after September 1st.
4. Where low areas, not properly drained, occur in the field, use about 15 pounds of alfalfa seed and 5 pounds of alsike clover per acre. If alfalfa has not been grown previously on the land, this mixture may be most satisfactory for the first seeding also.
5. On fairly uniform land the normal practice would be to plow up the oldest stand each year, but in actual practice the logical procedure is to plow for the corn the poorest stand. This should always be the choice in case of a failure of the new seeding. This method, however, cannot be followed where a portion of the area is unsuited for the alfalfa crop.

The chief merits of the "Rotation System" for alfalfa production are the possibility of having adequate hay each year and the reduction to a minimum of the acreage to be seeded annually. By following the procedure just outlined and by careful management, these results may be attained.

THE PROBLEM OF IMPROVED PASTURAGE

J. B. ABBOTT

In the course of conducting eighty pasture top-dressing tests involving the separate grazing of fertilized and unfertilized fields of four acres or more each during the past season we secured what we believe to be fairly representative figures as to the amount and seasonal distribution by months of grazing yielded by unfertilized land. Eliminating all cases where there was enough manger feeding of roughage during the normal grazing season to vitiate the accuracy of the grazing record, the number of cow-days grazing per acre each month was as shown in Chart No. 1. This chart, of course, does not present a new fact, as every one of you must be familiar with the fact that grass develops rather slowly with the coming of spring, reaches a peak of most rapid and abundant growth in June and declines to a low point again in the latter part of the summer.

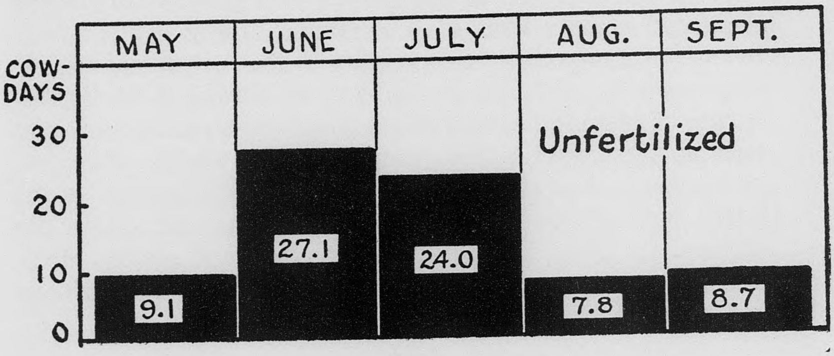

CHART 1

I am presenting this chart not because it embodies any new fact, but rather because it serves to point out one of the chief problems in improvement of pasturage; namely, *to produce more grazing when more grazing is urgently needed in May and in the latter part of the summer without producing a wasteful excess in June.*

You will observe that I am approaching the problem from the standpoint of producing the constant, uniform supply of grass which the herd needs rather than from the standpoint of improving any particular piece of pasture land. The latter is a simple enough problem of practical agriculture and one which any experienced farmer should be perfectly competent to solve on the basis of his past experience in growing crops. The former is not in any sense a difficult problem but it happens to be a problem somewhat outside the past experience of American farmers, who have not thus far paid very much attention to improvement of pasturage.

Knowing as we do that most pasture lands have been more or less seriously exhausted in fertility, the natural first approach to the problem is to inquire what can be accomplished with fertilizer in the direction of improving the amount, quality and seasonal distribution of grazing. Experiments which we carried out in 1928 and 1929 indicated that certain fertilizer treatments usually started grass into rapid growth ten days to two weeks earlier than on unfertilized land and furnished a better quality of grazing than unfertilized land at a correspondingly earlier date. In order to get accurate figures as to the magnitude of this response with different treatments we arranged during the spring of 1930 to harvest about 50 of our standard five plot tests at normal time of beginning grazing which, of course, varies from the latter part of April in this locality to the latter part of May in northern New England where the winters are alleged to be six months long and six feet deep. The average result of these 50 tests is shown graphically in Chart No. 2.

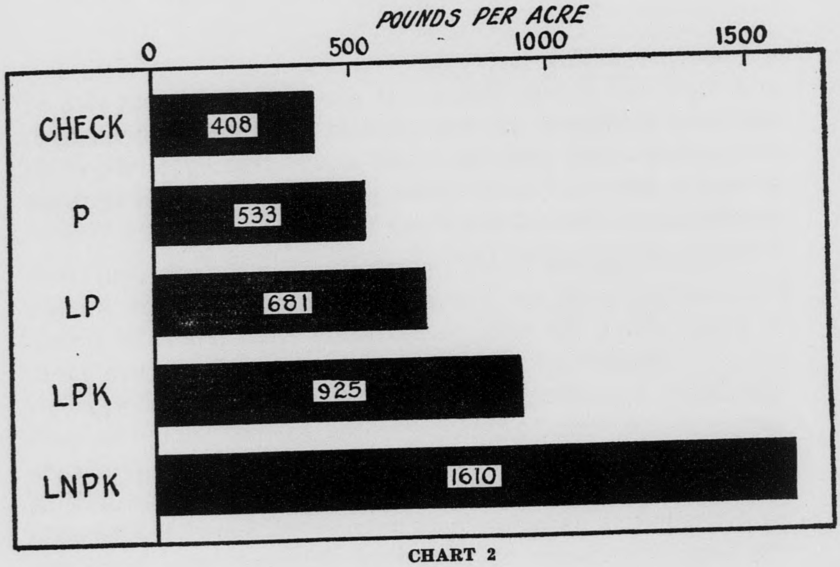

CHART 2

It will be observed that even the superphosphate alone treatment increased the yield rather strikingly on the percentage basis but not to a sufficient extent on the basis of pounds per acre to make any very material improvement in the grazing. The increase, roughly one hundred pounds of dry matter, which may mean perhaps six to eight hundred pounds of green grass, doesn't amount to a great deal when spread over an acre of land. A cow would have to be a very industrious beast indeed to find it and harvest it.

An increase of 1,200 pounds of dry matter, on the other hand, which may mean perhaps seven to nine thousand pounds of green grass per acre, makes a really significant difference and provides a quality of grazing which permits a cow to fill up in about two hours and spend the rest of the day at ease chewing her cud and making milk.

In addressing you a year ago, with less experimental data at my disposal, I believe that I was guilty of saying that there were strong indications that this increase amount of early grazing would save barn feed enough to very nearly pay for the fertilizer. That, of course, was not exactly a guess as it is possible to make some sort of a reasonable estimate of how many cow-days grazing is represented by a given amount of green grass, but admittedly it was more or less theoretical.

At the present time I am in a position to back up those estimates with a considerable amount of experimental data. Fortunately, some 35 or 40 of the farmers who co-operated with us in our commercial size grazing tests this year took the trouble to keep a record of the exact number of cow-days grazing per acre yielded by the fertilized land before the unfertilized land was fit to graze and the amount of barn feeding saved and extra milk produced during the period. The average was 40.7 cow-days grazing per acre before the unfertilized land was fit to graze, a saving in barn feed expense of $10.67 and an increase in milk produced of $3.20 per acre. The total of these two items is $13.79 and since the fertilizer cost was only $14.35 per acre, including cost of application, I think I can claim to have made a fairly conservative estimate when I stated that the early grazing would frequently result in almost enough saving in barn feed expense to pay for the fertilizer.

Of course, most of this extra early grazing is attributable to the nitrogen in the fertilizer and it is to be supposed that most of the phosphoric acid and potash as well as a substantial amount of the nitrogen still remains in the soil to cause further increased yield during the summer. That such, in fact, is the case is indicated by the fact that the fertilized land yielded 75% more grazing than the unfertilized land in June, 50% more in July and just about 100% more in August and September.

Fertilization alone, however, cannot be depended upon to improve very materially the shape of the grazing curve as it is natural for grass to grow faster in late May and June than at other times of the year and fertilizer does not materially change this natural habit of growth. But proper management of grazing land, combined with fertilization, can do a great deal to level up the grazing curve during the first half or two-thirds of the season.

The trick which solves the puzzle is to fertilize intensively only enough of the pasture to yield the amount of early grazing needed by the herd, which will require from one-fourth to one-half acre per cow, graze this fertilized portion before the unfertilized pasture is at its best, allow it to rest while the unfertilized pasture is good and then graze it again just as the unfertilized pasture begins to get short. This, of course, necessitates fencing the fertilized area.

Even this management, however, will not solve the problem of shortage of grazing during the latter part of the summer nor do I believe that any other fertilization or plan of management of *permanent* pasture will solve the problem. It is just as natural for grass to go into a resting period in late summer as it is for trees to shed their leaves in the autumn, so in order to provide grazing in late summer one must turn to some other source than the permanent pasture.

The European practice, which I have tried out in a limited way and which I believe to be especially well adapted to the moister, heavier types of soil, is to fertilize a hay field at about the same time as the pasture land, say between the 20th and 30th of March for this region, mow the hay two to three weeks earlier than usual and graze the aftermath. Early application of fertilizer is imperative and *early cutting is doubly imperative.* If you mow a stand of grass or a mixed stand of grass and clover only when it approaches maturity, the stubble is likely to stand brown and bare for the rest of the summer, but if you mow exactly the same kind of a stand while the grass is immature and still "has a whole lot of grow left in it," as the saying is, the aftermath will come on rapidly and the field will be green again almost before you can get the hay off from it.

Some early authorities, notably Brooks, of the Massachusetts Experimental Station, have advocated top-dressing with a high nitrogen fertilizer immediately after cutting the hay crop; but the trend of the more recent evidence is to the effect that better results are likely to be secured by putting all of the fertilizer on at one application early than by withholding part of the nitrogen until the hay is cut, at least up to application of 50 pounds of actual nitrogen per acre. Above that, possibly the divided application may be a sound practice.

The practice of grazing the aftermath has been in rather ill repute among American farmers because it has been their observation that it is likely to be injurious to the hay crop of the following season; but again the best modern evidence indicates that the practice is not injurious provided grazing is not over-done and fertilization not underdone. Obviously, if the grass is to be harvested twice during the season, once with the mowing machine and once with the cattle, it will have to be fertilized liberally and, of course, over-grazing to the extent of gnawing the grass right down to the crowns is certain to be injurious, whether it be meadow or permanent pastures.

In regions of the lighter types of soil, which are not so well adapted to the production of large yields and long-lived stands of grass and more subject to drought, yields of aftermath are not likely to be so satisfactory, unless there is a substantial percentage of alfalfa in the mixture. In such cases better results with regard to late summer grazing are likely to be secured from early spring seeded sweet clover or early June seedings of Sudan grass. Mortimer, of Wisconsin, reports the latter to be a particularly satisfactory pasture crop where fertility conditions are satisfactory. I have used it with fair success myself, though the cows seem to prefer sweet clover. Sweet clover is less particular about fertility conditions though more particular about having an adequate supply of lime.

Having but a limited first hand acquaintance with pasture conditions in Maryland, I shall have to refer you to Prof. Oldenburg for advice as to the local adaptation of the general plan which I have outlined. Such knowledge of Maryland conditions as I have leads me to believe that aftermath as a source of August grazing will be of greatest importance in the western hills and that sweet clover, Sudan grass and other annual spring sown crops will be found to be more dependable and satisfactory throughout the Coastal Plain region. Some of the newer warm-climate forage plants, such as Lespedeza, probably will be found to have a place in the grazing system but I have had little opportunity to make a study of their possibilities.

I referred earlier in my talk to some commercial size grazing tests which we carried on during the grazing season of 1930 in co-operation with farmers in Maryland, Pennsylvania, New Jersey, New York and the New England States. The general plan of these tests was to fence two comparable fields of not less than four acres each, fertilize one early in the spring with enough fertilizer to supply at least 30 pounds each of nitrogen, phosphoric acid and potash per acre, leave the other unfertilized and keep an exact record of the production of each field.

Of the 80 pasture top-dressing tests which were completed in 1930, 71 showed a profit and the average financial outcome of the entire eighty was as follows:

Receipts above cost of supplemental feed per acre of fertilized pasture	$92.24
Receipts above cost of supplemental feed per acre of unfertilized pasture	45.51
Increased receipts per acre due to fertilizer	46.73
Cost of fertilizer per acre, including application	14.35
Net increased return per acre	32.38

Most of the losses occurred in the drought region. Despite the unprecedented drought, the two tests in Maryland made a rather satisfactory showing. Mr. Wilson G. Heaps, of Pylesville, reported 49.2 cow-days grazing per acre from unfertilized land and 96.2 cow-days grazing per acre from fertilized land. Milk production in pounds per acre was 652 and 1,205, respectively. Mr. H. J. Orth, Jr., of Frederick, reported 103.2 cow-days grazing per acre from unfertilized land and 174.8 cow-days grazing per acre from fertilized land. The production of milk was 2,328 and 4,047 pounds per acre respectively. Both of these records were terminated the first of July on account of drought. Mr. Heaps made a profit over and above feed and fertilizer cost and production of unfertilized land of $12.91 per acre and Mr. Orth a profit of $31.85 per acre. The fact that these men made a fairly satisfactory profit despite the dry season seems to have been due to the fact that the fertilizer enabled them to start grazing at a much earlier date than usual and furnish much better grazing than usual, until drought prevented all further growth.

I assume that there must be a rather general shortage of hay throughout the drought-stricken region this winter and that there will be a real economic advantage in being able to turn cattle out onto good grazing at an earlier date than usual in the spring of 1931. Fertilization will make that possible wherever there is a sufficiently good sod to begin with. Of course, fertilizer must not be expected to do the impossible and produce good grazing where there is little or no sod. Selection of the area to be fertilized should be made with some care.

Thus far I have made no specific recommendations as to kind and amount of fertilizer though I have implied that it must be a high nitrogen fertilizer, that the amount must be liberal and that it must be applied early (by early meaning the 20th to 25th of March). When one considers the relation of plant food nitrogen in the soil to protein in the crop and the usual supply of nitrogen in pasture soils the reason why the application of fertilizer must be liberal becomes at once apparent. We secured in 1929 an average of 488 pounds of protein per acre of fertilized pasture as an average of 103 tests and in numerous cases yields of over 1,000 pounds of protein per acre have been reported. As 6.25 pounds of protein contain one pound of actual nitrogen, it follows that in order to make such yields of protein the pasture grass must get from the soil from 50 to as high as 150 pounds of nitrogen per acre. If the nitrogen is not there in available form, as it usually is not in permanent pastures, of course, it has to be put there in one form or another, either fertilizer or manure. Hence the recommendation of amounts of fertilizer proportional to the capacity of the grass to turn it into protein.

The recommendation of rather large amounts of fertilizer, however, is not based on these theoretical grounds but rather on tests which we have made comparing different amounts of fertilizer. The theoretical discussion in which I have just indulged is merely by way of explanation of the observed facts.

Our present recommendation is that the early spring application supply a minimum of 50 pounds each of nitrogen, phosphoric acid and potash per acre (and a larger amount of any one of these plant foods known to be particularly deficient). Any complete, high-nitrogen fertilizer will serve and so far as we know at present minor differences in analyses are not of great importance. By way of illustrating analyses which I believe to be readily procurable, but not at all as a complete list of satisfactory analyses, I would suggest the type of fertilizer used for potatoes on the Eastern Shore, that is, 7-6-5, or in case it is especially desired to stimulate more clover, the type of fertilizer more often used for late potatoes further north, the 5-8-7. Numerous special grass top-dressing mixtures such as the 8-6-6 analysis are offered and are satisfactory. Certain of the multiple strength analyses such as 10-16-14, 15-30-15, 16.5-16.5-21 and 10-20-10 have also been used with good results.

Our evidence indicates that it makes little difference whether one uses a light application, say 300 pounds per acre, of the multiple strength grades or a heavy application, say 700 pounds per acre, of the ordinary grades. It all comes down to a matter of supplying the grass with enough plant food early in the spring, and so controlling the grazing as to utilize the increased yield at those low points in the grazing curve when it is most needed.

But bear this in mind: You will lower the feed cost per 100 pounds of milk only as you succeed in substituting grazing for manger feeding. If you continue to feed just the same kind and amount of supplemental feeds per cow-day or per 100 pounds of milk with fertilizer as without, you will make a lot more milk but certainly will not lower the unit feed cost. So if you want more milk, fertilize some grazing land and feed supplemental feeds as at present, while if you want cheaper milk, fertilize the pasture and adjust your feeding practice to the better quality and quantity of grazing.

EMERGENCY FIELD AND FEED CROPS

By W. B. Kemp

In any consideration of emergency crops for the coming spring it is necessary to assume that the drouth is ended, or will end in time for spring planting. During this past fall many who had a very short corn crop endeavored to replenish their supply of feed grain by planting fall barley, or, if in Southern Maryland, possibly they used fall oats. But frequently the moisture supply was not sufficient to sprout the seed until so late that the crops even now are killed by the winter weather. Any consideration of emergency crops for this coming year must assume that by spring there will be sufficient moisture to permit normal plant growth. But this is not the only assumption that is made in any recommended program of emergency crops. For it is taken for granted that the rainfall of the coming season will be normal. Also, the demand for seed of some crops will be so great that supplies may become depleted. For there is usually no great reserve of seed of these crops for which seed is used only for planting. Thus it may be necessary to draw more heavily upon crops such as oats and corn for which a part of the reserves for feed may be used for planting.

The crops in which an emergency exists may be divided into three groups. Namely, those for grain, for hay, and for pasture.

For grain the only crop, earlier than corn, that can be recommended is spring oats, and it is so uncertain in Southern and Eastern Maryland as to be inadvisable for general use in those areas.

Spring barley and spring wheat are not recommended for any part of the State. Hence, if grain feed is short, the only reasonable opportunities to replenish the supply, aside from feeding wheat, are spring oats for northern and western Maryland and a small acreage of very early maturing corn varieties for all sections. Very early maturing non-sugar table corns, such as Early Adams, may be planted early enough to furnish corn for feed through August and September. Of course, the small size of this corn makes it advisable to plant much thicker than is usual for field corn. Ordinarily, one can not expect a yield greater than seventy per cent of that expected from well adapted field corn, therefore, the acreage should be limited to that necessary for furnishing emergency grain before other corn is ready for use.

For furnishing an emergency supply of hay the method resorted to will depend upon the seriousness of the situation. If a part of the wheat that is now growing is cut in the late milk stage it will furnish a satisfactory emergency hay. Also, the clover that is growing in the wheat will make a bigger crop of aftermath hay or pasture where the wheat is cut early. Spring oats makes a desirable hay crop even in southern and eastern Maryland where its use for grain is usually inadvisable. And in this connection, let it be remembered that the early short-growing varieties that are best adapted for seed production thus far south are not the varieties which produce the most hay. Any of the big late white oats that are usually found in the market are satisfactory for this use. However, there is one precaution that must be exercised. If feeding oats are purchased for seed use, be certain that the germination is good. For oats that have heated, or that have been treated with sulphur dioxide to make them appear white, may not be injured for feeding but may be ruined for seed. Therefore, be certain that the seed you plant will really grow. And just as the cutting of wheat for hay produces conditions favorable for growth of clover and grass that is seeded with it, so cutting spring oats for hay makes the crop a better companion for grass and clover that may be seeded with it than might be obtained if the crop were permitted to ripen for seed. Hence, land that should be seeded to a hay mixture may be used to advantage to produce a crop of oat hay.

Where the hay will not be needed before winter it is probable that soy beans and cow peas will be depended upon more than any other crops; soy beans for all parts of the State and cow peas in southern and eastern Maryland. However, the great prospective demand for seed of these crops may result in a sharp rise in price. Also, this demand may bring unfamiliar varieties onto our market. The seeding rate for soybeans for hay usually should not be reduced below six pecks per acre of the recommended varieties for this area, such as Virginia and Wilson. However, standard varieties of other areas, which may find their way into our market in large quantities this year, have seeds larger than those of Virginia and Wilson and, therefore, must be seeded at heavier rates. If seed becomes expensive, it may be advisable to plant the standard varieties at a rate of about one bushel per acre and supplement this seed with about six pounds of Sudan grass. The yield of hay from this soybean-Sudan grass mixture should be at least as great as that produced from soy beans alone; however, the reduced protein content will make it somewhat less valuable as feed for dairy cattle.

One important consideration with all of these emergency hay crops is their relative expense. If there is any acreage on the farm where a new or old stand of a hay mixture is good enough to leave for cutting, the cheapest addition to the tonnage of the hay crop that can be produced is that which will result from a liberal fertilization of this hay mixture. The probabilities are that alfalfa, timothy and red top have lived through the drouth better than the clovers. Therefore, the fertilizer application should obtain a liberal quantity of nitrogen. If an early potato fertilizer is available which contains about seven per cent nitrogen, six per cent phosphoric acid and five per cent potash, this material will make a desirable top dressing. It should be applied at about the time when growth begins in the spring.

The last group of emergency crops for consideration is the pastures. The same situation with regard to fertilization that obtains results with the hay crops obtains results also with the pastures. That is, wherever old stands of permanent blue grass or of temporary grasses have lived through the drouth in such condition that one is justified in leaving them for pasture, the cheapest addition to the pasture supply that can be secured is that which will be produced by a liberal application of the same high-nitrogen fertilizer that was recommended for hay. But it is even more important that this pasture application be made early than it is to make an early application for hay. For not only is the earliness with which pasturing may begin dependent upon the earliness with which this early fertilizer application is made, but also a late application that has not been washed off the grass by rain before pasturing begins may be injurious to the livestock if it is consumed by them while they are grazing.

One of the difficulties that always accompanies spring planting of a crop intended for grazing early in the same year is the loose soil which permits the crop to be tramped out easily during grazing. Usually a grain crop such as oats, that is intended for green feed for livestock, gives so much greater returns if it is cut and hauled to the animals than it does if they are turned in to graze on it, that the great labor of daily cutting is justified. If the ground is very fertile, or if it is heavily fertilized with a fertilizer high in nitrogen, one may be justified in planting Italian Rye grass as a temporary pasture. Seeded early, at the rate of fifteen pounds of seed per acre, this crop should be ready to graze by early June, and should continue to produce through the normal producing period for grass. If the American seed is appreciably cheaper than the imported seed, it may be used even though it is usually a mixture of Italian and English Rye grass. If other grasses of our ordinary grazing mixtures are to be seeded with the Rye grass, to produce grazing after it is gone, the amount of Rye grass seed in the mixture should be reduced to ten pounds or less. Where the soil is well limed and inoculated, sweet clover, planted in wheat or oats that is to be cut for hay, should be ready for grazing in July. For this purpose a desirable seeding is about ten pounds of sweet clover seed and two to three pounds of alsike clover seed per acre. Alsike clover is recommended in this mixture because it will fill the vacant patches, even though it does not supply such abundant grazing as that supplied by the sweet clover.

Where the cutting of green feed must be resorted to, wheat that is already in the ground may be cut from about May first. This may be followed by oats planted as early in the spring as the land can be worked. The oats will be followed in turn by corn. The very first of the corn may be planted with a grain drill at the rate of about a bushel per acre, heavily fertilized, and cutting may begin with a scythe or mowing machine when the corn is about one foot high. Corn for later use would be planted thickly in rows, cultivated, and cut as needed after it has attained a height sufficient for hand cutting. Successive plantings of corn will produce green feed for as much of the remainder of the season as may be desired.

In closing, let me remind you again that these temporary pasture or green crops are likely to produce more expensive feed for the favorable part of the grazing season than that which can be supplied by early liberal fertilization of any grass which may have come through the drouth in reasonably good condition. Of course, fertilizer for use on grass should contain large quantities of nitrogen.

QUESTION: (Member from Harford County)—The seed houses are offering us a number of varieties of soybeans this year. What are the best varieties for us to sow?

MR. OLDENBURG: There are many varieties of soybeans, soybeans with large seed and with small seeds. There are yellow beans, brown beans, black beans and mottled beans;

beans no larger than a mustard seed, ranging to beans nearly as large as lima beans. There are varieties that ripen in 90 days and others that take more than 200 days. There are varieties that produce short, thick stems and others that have tall, thin stems. Some varieties shatter beans easily, and lose their leaves early, while others do not.

Consequently, there have been many years of experiments to find out which varieties are best suited for hay for Maryland conditions. The two varieties found to be the most satisfactory are the Virginia and the Wilson.

The Virginia is a brown seeded variety having about 250,000 beans to the bushel. It produces a fine stemmed plant with twining ends, and when sown at the rate of a bushel and a half per acre produces a fine stemmed hay.

The Wilson is a black seeded variety, but otherwise much like the Virginia. A strain known as the Wilson five is even smaller seeded, having 300,000 beans to the bushel.

Both of these varieties have been grown in Maryland quite extensively for the last ten years, and would be the safest varieties to sow. However, the crop of these two varieties was below normal and the supply of seed on hand is not as large as in normal years. Undoubtedly, also, a much larger acreage of soybeans will be grown this spring and the supply of these two most desirable varieties for hay purposes will be exhausted early.

It would, therefore, be wise for every farmer who is short of hay to order his soybean seed now and not wait until a short time before planting. By that time these varieties may not be obtainable. If there are any left on the market, the price is apt to be much higher.

Fortunately, if the Virginia and Wilson varieties become exhausted or become too high in price, there is a good supply on hand of several yellow seeded varieties. One of these is known as the Manchu. This produces a stocky, leafy stem and ripens in about 115 days, which is five days earlier than the Wilson and Virginia varieties. All of them would be ready to cut for hay about 90 days after sowing.

The Manchu variety, however, has only about 140,000 beans to the bushel, while the Virginia averages 250,000 to the bushel. A farmer, when comparing the price per bushel of these two varieties, should remember that for hay purposes a small bean is just as good as a large bean and, other things being equal, that one is cheapest that will give him the greatest number of beans for a dollar. In other words, to get the same quality of fine stemmed hay, he would have to sow one and one-half to two times as many beans per acre of varieties having large beans as in the case of small seeded varieties.

If the relative price of the Virginia and Wilson varieties become high, there is another yellow seeded variety, much like the Manchu, that would probably do well in Maryland. It is a new variety, but it has proved very satisfactory in Illinois and Indiana, where they prefer varieties that give a fair hay crop and a good bean crop, also. This variety is known as the Illini.

The Illini is a large stemmed variety with a good leaf development. But to get a hay equally fine as that produced by the Wilson and Virginia varieties, it would have to be planted considerably thicker. In any case, to insure getting the kind of soybeans you want, order your seed early this year.

THURSDAY MORNING

January 8, 1931

Baltimore, Maryland

The second meeting of the Crop Improvement Association convened at ten thirty-five o'clock, Mr. Matt Harding, President, presiding.

PRESIDENT HARDING: I believe we might as well go ahead. I have the pleasure of introducing to you Professor Schuster, of the University of Delaware, who will give us a talk on "Methods of Corn Fertilization." Professor Schuster. (Applause).

FERTILIZER PLACEMENT FOR CORN

GEO. L. SCHUSTER*

Past investigations of fertilizer practice have dealt exclusively with the sources, ratio and quantities of the important fertilizer elements. Only recently has the fact that the method of application may be of equal or greater importance been recognized. About three years ago the problem was given attention by Agronomists, Agricultural engineers and fertilizer manufacturers. Several crops were taken into consideration but only corn will be discussed at this time.

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*Agronomist—Del. Agr. Expt. Station

One of the first things to find out was how the present machinery was distributing the fertilizer. Accordingly, eight manufacturers of corn planters sent their machines to Madison, Wisconsin, where a study of them was made. All companies had their representatives on hand. I will quote from Jenson's (1)† report. "One company did not send a planter because the demand for fertilizer attachments had exhausted their supply. Several of the company representatives admitted shortcomings in their attachments, and stated they were open to suggestion and anxious to improve their design so as to apply fertilizer in the method recommended.

"In this test it was apparent that most manufacturers have recognized the desirability of giving some spread to the fertilizer and have accordingly placed spreaders of various designs at the point of discharge. These are not always effective in accomplishing a good distribution. Drawn across a floor or bare ground, the pattern of the distribution is very pretty, but in the field the effect was one of applying the fertilizer on the pages of an open book, and then shutting the book, in that the fertilizer was in a groove or narrow furrow, with usually some in contact with the seed.

"Some manufacturers, knowing that fertilizer should not come in contact with the seed, have so adjusted their attachments that the fertilizer is safely placed to one side of the seed, usually ahead of the hill. One planter placed the fertilizer midway between the hills, and the company representative explained that by so doing, the plant food was available to the crop at tasseling and earing time when the demand for plant food was the greatest.

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†Literature cited.

"Some planters could not be adjusted to vary the rate of application with any degree of accuracy. In one make, the minimum rate was 60 pounds per acre, and the next notch on the adjustment allowed an application of nearly 200 pounds per acre.

"The accuracy of application varied widely in different planters. For instance, if a planter was set to apply 125 pounds per acre, the rate in individual hills would vary from 90 pounds per acre to 200 pounds per acre. In general, the variability was greater with small rates than with large rates. An improvement in the accuracy of some fertilizer attachments is highly desirable."

Corn planters were also found that were very irregular in their delivery. Thus dumping an over-application in one hill and leaving scarcely any in the following hill. Under such conditions the first hill will not germinate. The second will germinate but lacks the vigor of a properly fertilized hill. In the first case the missing hill has been credited to poor germination which is true but it is not the fault of the seed. When the soil is carefully removed the fertilizer and seed will all be found in one hill. The salt concentration of the fertilizer killed the seed.

Have you ever noticed a poor stand of corn in one row and a good stand in the next? All corn planters do not deliver the same for the right and left hoppers. Table I gives the results of Jensen (2).

Table I. Minimum and Maximum Rates of Fertilizer Per Acre Application Possible With Different Planters

Planter	Minimum		Maximum	
	Left	Right	Left	Right
A	46	47	359	330
B	28	60	515	536
C	31	24	508	520
D	33	38	361	347
E	33	21	617	594
F	55	53	547	513
G	24	10	601	519
H	52	60	252	262

The condition of the machinery, the condition of the fertilizer, the weather, and even the time of day has some influence on the rate of application but these planters were all tested under the same conditions. The fact remains that these planters lack the construction that brings precision.

The question then arises: What is the proper method of applying fertilizers for corn?

There are two methods of applying fertilizer. (1) broadcast, (2) in the hill or in a localized area. Broadcast applications, as a rule, involve a separate operation in addition to seeding. Hill or row applications are usually made through a fertilizer attachment on the planter and thus do not involve separate operations.

One of the earliest and at the same time one of the most comprehensive studies of fertilizer placement yet made was that of Coe (3). Many of Coe's conclusions have been confirmed by later investigations. Some of the more important of these are as follows:

(1) Direct contact of fertilizers with seed in the drill row or hill retards and inhibits germinations.

(2) The germination injury increases progressively with the amount of the fertilizer applications.

(3) The concentration of the soil solution surrounding the seed apparently is the primary cause of germination injury, due to the osmotic resistance offered to water entrance into the seed.

(4) Both chemical and pure organic fertilizers applied in direct contact with seed injure germination, the application rate per acre being a more important factor than the kind of fertilizer.

(5) Rainfall during the germination period varies the injury greatly, but generally lessens the fertilizer "burning" for the direct contact treatments by displacement of the fertilizer acid dilution of the soil solution.

(6) The greater the moisture content in a given soil, the larger the amount of fertilizer required to injure germination.

(7) Moisture content is a more important factor affecting germination than soil type although the heavier the soil type, the larger the amount of fertilizer required to injure germination.

(8) Vertical diffusion of fertilizers in the soil is rapid, but horizontal diffusion is very slow. Rainfall and surface sprinkling affect the former chiefly but aid horizontal diffusion also.

(9) All direct contact fertilizer applications depress the initial growth of plants. The low applications check growth mainly, the medium applications cause delayed maturity and stunted plants with weakened resistance to disease and bunched roots, and the high applications produce positive inhibition of germination.

(10) Location of the fertilizer above the seed with varying intervals of soil separation proves worthless in dry seasons. Rainfall is necessary to leach the salts down around the roots so that fertilizing benefits may be obtained.

(11) Rainfall immediately after planting with the fertilizer located above the seed will leach the salts down around the seed with more or less injury to germination, depending upon the soil type, the rate of fertilizer application, the amount of rainfall, etc. If the soil type is heavy then, certain fertilizer ingredients like the phosphate may be largely absorbed by the surface soil and hence lost to the crop intended, even under rainy conditions.

(12) Location of the fertilizer directly below the seed with varying intervals of soil separation produces quick results. High applications near the seed cause germination injury during a dry season or under conditions of capillary watering. In rainy seasons and with surface watering the upward movement of fertilizers around the seed is lessened, hence normal germination occurs.

(13) Below applications of fertilizers in narrow strips of considerable thickness prove more injurious than wide strips of small thickness.

(14) Side applications of fertilizers are best, because they insure germination and give fertilizing benefits irrespective of the rainfall conditions. Earliest maturity and good harvest weights are secured with such side locations. However, increasing the interval of soil separation between the seed and fertilizer delays the benefits progressively within limits.

In his study of planter fertilizer attachments Coe found in a survey of 124 planters, set for drilling, 71 allowed direct contact either through the delivery tube or in the row before seed and fertilizer were covered with soil. Coe also noted that the claims of manufacturers as to where their machines placed the fertilizer were frequently in error. From his study of corn planters, Coe was led to conclude that "The solution of the entire problem, both for successful checking and drilling—a solution which insures against germination injury and guarantees quick fertilizing benefits—is the location of the fertilizer in a second furrow parallel to the seed furrow but in spaced relation therewith."

Tests made with corn at Ohio (4), Tennessee (5), North Carolina (6), and Iowa (7) show that localized placement is superior to broadcasting.

The Delaware Agricultural Experiment Station had two tests the past season on the placement of fertilizers for corn. One of these tests was located at Newark on Sassafras Silt Loam soil and the other at Milford on Sandy Loam soil. The season was not normal, being exceedingly dry and therefore interfering with the results from fertilizer that might be expected. The fertilizer, a 4-10-6, was applied at the rate of 125 pounds per acre in the following manner:

(1) In a 4" x 10" band level with the seed.
(2) In a 4" x 10" band ¾" above the seed.
(3) In a 4" x 10" band ¾" below the seed.
(4) In two parallel bands ¾" x 10"—2½" apart and ¾" above the seed.
(5) Same as (4) with additional nitrogen in July.

Two hundred and fifty and five hundred pound applications were the same as in (4) and with additional nitrogen in July.

A broadcast application of 500 pounds per acre was also made.

The results are given in Tables II and III.

Table II. Results at Newark on Fertilizer Placement Tests on Corn. 4-10-6 Fertilizer.

Treatment	Germination	Days to Silk	Per Cent Sound	Yield, 15.5% Moisture Bu. per A.
No fertilizer	Normal	87	66.8	27.1
125# 4" x 10" band level with seed	“	77	76.4	47.6
Same ¾" above seed	“	77	82.1	44.4
Same ¾" below seed	Slightly Retarded	78	82.5	40.0
Same mixed with 1¼" surface soil	Normal	77	83.2	41.2
125# in parallel bands ¾" above seed	“	77	83.8	41.2
Same with nitrogen added in July	“	77	82.4	40.0
250# in parallel bands ¾" above seed	“	77	80.9	45.5
Same with nitrogen added in July	“	77	92.7	49.6
500# in parallel bands ¾" above seed	Retarded	78	88.8	40.4
Same with nitrogen added in July	“	80	89.1	40.9
500# broadcast	Normal	82	81.2	42.4

Table III. Results at Milford on Fertilizer Placement Tests on Corn. 4-10-6 Fertilizer.

Treatment	Germination	Days to Silk	Per Cent Sound	Yield, 15.5% Moisture Bu. per A.
No fertilizer	Normal	85	58.0	24.7
125# 4″ x 10″ band level with seed	"	78	72.9	38.0
Same ¾″ above seed	"	80	63.2	28.9
Same ¾″ below seed	Slightly Retarded	80	74.2	31.4
Same mixed with 1¼″ surface soil	Normal	80	69.1	31.0
125# in parallel bands ¾″ above seed	"	80	68.2	31.5
Same with nitrogen added in July	"	78	70.1	38.5
250# in parallel bands ¾″ above seed	"	79	76.1	27.8
Same with nitrogen added in July	"	79	72.3	35.8
500# in parallel bands ¾″ above seed	Retarded	83	77.6	28.4
Same with nitrogen added in July	"	83	78.7	24.7
500# broadcast	Normal	81	66.7	28.7

It is evident that a localized application does hasten growth as is indicated by the number of days to silking time. Fertilizer placed below the seed and large amounts of fertilizer (500 pounds) retarded germination. Fertilizer applied in a localized area in parallel bands ¾″ above the seed did not injure the seed, but stimulated quick growth and produced satisfactory yields.

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QUESTION: At what stage during the growing of corn is the fertilizer of most benefit to that corn?

PROFESSOR SCHUSTER: We need fertilizer first to give it a quick start, I would say.

QUESTION: Then it doesn't figure much in benefiting it while it is earing?

PROFESSOR SCHUSTER: It benefits it in this way, in that you have your factory built and ready for operation. In other words, you can't produce a big ear of corn if you don't have plent of breathing surface, leaf surface, and plenty of root system.

QUESTION: As I got it this morning, a great deal of fertilizer ruins germination of the corn?

PROFESSOR SCHUSTER: That is the first danger.

QUESTION: What has been the result of the newly invented corn cultivator with fertilizer attachment?

PROFESSOR SCHUSTER: Such as the John Deere cultivator? I haven't had any observations on that at all. I don't see why it wouldn't work. You don't get enough food in the morning to do you all day, do you? Well, we can't expect to feed a growing plant that is growing from 90 to 150 days, feed it enough at one shot to last it the entire season. I think that is a logical way to look at it. We may have to feed it occasionally all through the season.

QUESTION: What has been determined as the life of the fertilizer in the soil? Will it go beyond the growth of the corn to help the next season's crop?

PROFESSOR SCHUSTER: There is some residual effect. How much, I wouldn't like to say.

QUESTION: What I have in mind is the broadcast system. There isn't nearly the danger of ruining the germination. While you may not get all the benefit of that fertilizer with that corn, you may get it in the next crop, and yet be safer with the corn.

PROFESSOR SCHUSTER: Yes, that is true.

QUESTION: Would you say it is of any advantage to plant the corn and then put the fertilizer on?

PROFESSOR SCHUSTER: You might accomplish the same thing, but with considerable more labor involved.

QUESTION: Have you any attachment that could be attached to any corn planter to apply fertilizer while planting the corn?

PROFESSOR SCHUSTER: There is none to my knowledge. You mean a separate attachment to put on any corn planter. I don't know that such an attachment is on the market.

QUESTION: Is it a fair question to ask what corn planters give the best results?

PROFESSOR SCHUSTER: It is a fair question, but I don't know. This work that I have reported here I had nothing to do with first hand. It is all from published material, and they used A. B. C. just like I gave it to you, so I couldn't help you out any on that. The only thing I can do is give you the information so you can use it in looking over corn planters with that in mind.

QUESTION: I have a John Deere corn planter with a fertilizer attachment. I haven't been able to get results by putting that fertilizer in back or in front of the hill. It seems to me that the roots go out all around, the roots in the side of the hill at right angles. My best experience up to the present has been to broadcast fertilizer. That is contrary to your experience.

PROFESSOR SCHUSTER: We got some results here with broadcasting.

MR. FUNK: Have you noticed any effect on succeeding crops following the application of localized fertilizer?

PROFESSOR SCHUSTER: I haven't had an opportunity to observe that.

MR. FUNK: It has been my experience that that effect overbalances the hill application, and I would agree that the general distribution of fertilizer is best.

MR. ZIMMERMAN: In our section we usually run a crop of wheat or barley where you have used the corn planter.

PROFESSOR SCHUSTER: That is reasonable, you would expect that, especially if you are putting on a large amount of localized application.

MR. ZIMMERMAN: You have brought out the danger to germinating, and I think it is safer to use the broadcast method.

PRESIDENT HARDING: Gentlemen, I feel that we have all gained some information in regard to the application of fertilizers, especially for the corn crop, and I think it is a thing that we might well consider when we consider the price of corn and the price of fertilizer that we have to apply. I think it would be well worth our while to take and keep this in mind and consider it and think it over when we plant our corn crop next year. My experience has been for the past thirty years, and I have been farming all my life, that we get better results in our county by hill application than any other way. I have sold quite a lot of fertilizer myself, hundreds and hundreds of tons of it. I have experimented with it from fifty pounds up to 1,800 pounds per acre on various crops in every way it could be applied to the soil, and I have plowed it in the ground and put it on top of the ground before planting, and I always get best results by hill application. I have gotten very little satisfaction from the broadcast application of fertilizer for any spring crops that I have ever tried. I am a firm believer in hill application, but I think as the speaker said, we want to guard the germination of our seed and not get it too close.

Now I have the pleasure of introducing to you Mr. S. H. DeVault, of the University of Maryland, who will speak on "Elements of Successful Farming." Dr. DeVault. (Applause).

BY S. H. DEVAULT

The Department of Agricultural Economics of the University of Maryland has made a study of the organization and business analysis of 282 farms in the Piedmont Plateau region of Maryland and 268 farms on the Eastern Shore. Detailed information covering the receipts from sales of crops and livestock products, farm expenses, use of farm equipment, efficiency of labor, farm income, labor income, interest on investment, and per cent return on investment was obtained for the year 1929.

The purpose of the study was to secure data on the relative profitableness of types of farming in different parts of the State; to determine factors affecting profits; to study variations on individual farms from year to year; to determine to what extent farmers in the different areas should change their crop and livestock enterprise combinations; and to obtain accurate data needed on which to base suggestions and recommendations for the more profitable organization and operation of Maryland farms.

The study is not an enterprise cost of production study but a study of the farm as a whole. Farmers need to give more attention to the organization of their farms and to the selection of different enterprises. This is one of the greatest problems confronting farmers today. Farmers may have the wrong combination of crop and livestock enterprises on their farms. They often do not know what enterprises are paying best.

The ultimate aim of all farm production is to secure the greatest profit. Profitableness resolves itself into two things—price and cost. Price is centered around producing what the market demands. Cost resolves itself into having the lowest cost per unit of product. Income equals the selling price minus the cost of production multiplied by the number of units of production.

Of the 282 farms surveyed in the Piedmont Plateau region, 178 or 63 per cent returned a plus labor income and 104 farms showed a minus labor income. The different kinds of farms and the percentage that made a plus labor income are as follows: Dairy farms, 74 per cent; general farms, 58 per cent; cash crop farms, 42 per cent; general livestock farms, 40 per cent; and poultry farms, 90 per cent. The labor income on individual farms varied from a minus $3,000 to a plus $5,000. The 50 most profitable farms made a labor income of $2,779 per farm as compared with a minus labor income of $1,503 per farm on the 50 least profitable farms. The most profitable farms returned 17 per cent on investment and the least profitable made a minus return on investment. The most profitable farms had a smaller total investment and a much smaller investment in buildings, yet had a greater investment in machinery and machinery per acre. The expenses for hired labor were just about one-half as much on the 50 most profitable farms as on the 50 least profitable. Apparently the most profitable farms are making more efficient use of labor with the aid of machinery and equipment. The crop receipts on the most profitable farms were larger, the crop receipts per acre almost double, and the total animal units and dairy cow units were more on the 50 most profitable farms. The total milk sales were larger and the milk sales per cow almost twice as great on the most profitable farms.

In this article it is impossible to present and interpret the vast amount of data collected on the income and efficiency of farms in the Piedmont Plateau region of Maryland. From the data, however, it is possible to make certain deductions and draw certain conclusions. In the first place, earnings on most farms can be increased through increased efficiency in operation. Greater efficiency means larger yields per acre of crops and greater returns from livestock per unit of expense. The profitable farms have from one-third to one-quarter greater yields in corn, wheat, oats, hay, potatoes and other general crops than the average for the region. On the profitable farms much larger returns are secured per dairy cow and for other classes of livestock. In the second place, profitable farming requires balanced farming. Neither extreme diversification nor specialization will give the greatest returns in this region of the State.

On many farms high labor costs was one of the most important factors responsible for low net farm incomes. Usually efficient use of farm power, including both horses and mechanical power, is associated with efficient use of man labor. Labor is the most expensive factor in production and every effort possible should be made to economize in its use.

It is desirable for farmers to market their feedable crops through livestock and particularly in the form of livestock products rather than sell them as cash crops. Those engaged in dairying should attempt to produce most of the corn, hay and roughage for their livestock. Then, it will be profitable to buy enough of concentrates to provide a satisfactory balanced ration.

A study was made of 268 farms in seven counties on the Eastern Shore; namely, Talbot, Kent, Queen Anne's, Caroline, Worcester, Somerset and Dorchester. The average investment per farm in these counties in 1929 ranged from $10,000 in Caroline County to $24,000 in Talbot County. The labor income per farm varied from $2,168 in Caroline and $2,039 in Somerset to $471 in Queen Anne's and $604 in Talbot County. With a comparatively small investment per farm, comparatively large receipts and small expenses, the farms in Somerset, Worcester, Caroline and Kent Counties returned a good per cent on the investment.

In the two lower Eastern Shore Counties, namely, Worcester and Somerset, potato sales overshadow everything else amounting in 1929 to $3,377 per farm in Somerset and $2,976 in Worcester. Berry sales per farm in Worcester County amounted to $1,143 and the sales of tomatoes in Somerset and Dorchester Counties amounted to about $1,000 per farm. The sale of wheat in Talbot and Kent Counties amounted to $1,300 and $1,400 per farm, respectively.

Undoubtedly in Worcester and Somerset Counties potatoes is one of the most, if not the most, profitable crop year in and year out that can be grown on that soil. The year 1929 was a good one for the potato growers, while 1928 was a disastrous one. With one good year, one fair to poor year, and one poor year out of every three, farmers can come through on potatoes provided they deposit in the bank enough money in the good year to tide them over the bad one. If the comparative advantage in producing potatoes is not with the farmers in the heart of the potato belt in the two Eastern Shore Counties of Virginia and in the two Lower Eastern Shore Counties of Maryland, then I do not know of any section that has an advantage. Maryland potato growers should keep this in mind, and in considering the advisability of reducing the potato acreage in Maryland, attention should be given to what other competing states are doing. If Maryland potato growers reduced their acreage in 1931 by 1,000 acres and North Carolina say, increased the acreage in that state by 4,000 acres, Maryland growers might be worse off than if they had maintained a normal acreage. At any rate, serious thought should be given to the danger of turning a profitable industry over to some other state to swell the wealth of their coffers. Potato growers, however, should give some thought to diversifying their farm business by producing in addition to potatoes a few acres of strawberries, a few acres of tomatoes or asparagus or some other crop that is well adapted to the region and will return a profit above cost of production.

Berries and tomatoes in 1929 were relatively profitable crops in certain areas on the Eastern Shore. In Caroline, Kent, and Somerset Counties sales of poultry and eggs added greatly to the farm income, while dairying was a stabilizing factor in the agriculture of Kent, Queen Anne's and Talbot Counties in 1929.

Owing to the drought and the low prices received for most farm products, the income to Maryland farmers in 1930 was considerably less than in 1929. There has never been a year in the memory of many of us when Maryland agriculture was so adversely affected as in 1930. But even in this year of short crops and low prices there were good farmers in Maryland on good land, using good equipment and methods of farming, who have fared very well.

PRESIDENT HARDING: Gentlemen, I think we are all pleased to hear this talk and will be benefited by it. The speaker has explained what accounting on the farm means at the end of the year. I believe the most successful farmer is the man who keeps track of his income and outgo.

Our next talk is on "The Seed Corn Situation" by Mr. F. W. Oldenburg, of the University of Maryland. (Applause).

MR. F. W. OLDENBURG: Gentlemen, this is the second season we have had that wasn't very good for corn. The reports showed 1929 was the driest year we ever had, but this year certainly went ahead of 1929, and about corn cutting time you all know how we were puzzled to know just what the seed corn situation would be. We knew the corn crop was short. However, the continued dry weather left the corn in excellent seed condition. Anybody who had any good corn at all found they had seed.

The question is, is there seed enough in your own county, and if you are short of seed can you get it in the immediate neighborhood? I believe in most counties you can. There are only a few counties, I believe, where there is not sufficient. I believe that is true in southern Maryland, and possibly in Frederick County, and in some other parts of the State. In northern Cecil County and northern Harford County, north of a line running from Newark, Delaware, down to Havre de Grace and then running up to about the center of northern Harford County, most of the farmers had a pretty good corn crop, and some of them have more seed this year than they usually have, so we are fortunate in that way.

Now, those who have fair corn crops are puzzled this way: They would like to save the seed if it would pay, but they don't know what the demand will be, and the danger is that unless they know in time a good deal of it will be fed up, and it is being fed up fast. In order to locate the seed, the Extension agronomist has been pretty well around the State and has spent quite a good deal of time in the field looking for sources of seed, and we are making a list of those farmers who have seed for sale, including the kind of seed and its condition. We are doing about the same kind of work for seed corn as we have been doing in co-operation with this Maryland Crop Improvement Association with our seed wheat, and so far we have located about thirty sources of good seed or about ten thousand bushels.

. . . The meeting adjourned at twelve-fifty o'clock . . .

ADJOURNMENT.

REPORT
of the
TWENTY-SECOND ANNUAL MEETING
Maryland State Beekeepers' Association

LORD BALTIMORE HOTEL
BALTIMORE, MARYLAND
January 7, 1931

The twenty-third annual meeting of the Maryland State Beekeepers' Association was called to order by the President, A. Howard Johnson, at the Lord Baltimore Hotel, January 7, 1931. Following the President's annual address and the Secretary's report, both of which are included herewith, Mr. Sechrist, of the Office of Bee Culture, U. S. D. A., delivered a very interesting address on "Bee Management." Dr. T. B. Symons, who organized the Association in 1908, addressed the society on "A Greater Beekeeping Industry in Maryland." A map showing the distribution of the industry according to a recent questionnaire and the distribution of disease according to last summer's inspection was displayed and explained. Dr. Symons stressed a five-year program in better beekeeping, disease control, and the planting of suitable crops as bee forage.

Following Dr. Symons' talk, Mr. Sechrist talked on the artificial crystallization of honey by the following process: Honey liquified at 180-200°, cooled quickly to 75°, then fed with fine crystals, and the temperature again reduced to 57°, held at the latter temperature for three days when the crystallization is complete. This improves the flavor and color of dark honey, particularly buckwheat honey.

Mr. Abrams provided entertainment with Mr. Sy Duckman, who played and sang popular songs with some adaptations for the beekeepers' benefit.

Mr. Aman moved that Mr. Johnson be re-elected. This was unanimously carried. Mr. Aman was renominated for a second term by Mr. Kelley and the motion was carried. Mr. Aman nominated the present Secretary-Treasurer for re-election and the motion was carried.

The traffic rate case as set forth by Mr. Hawkins was laid on the table.

The next meeting is to be held, February 21st, at the Rennert Hotel. The Secretary was instructed to purchase honey to be delivered to Mr. Davis.

ANNUAL ADDRESS BY THE PRESIDENT

By A. HOWARD JOHNSON, Centerville.

Fellow Beekeepers:

In reading the printed program I find that I am supposed to make an address, but with the distinguished speakers we are to hear tonight, I am sure you will be glad to hear me say that my talk will not be very long. I shall very quickly tell you what we have done and are trying to do along Association lines since we last met in annual meeting.

The past year has been a very trying one on beekeepers and honey producers. In the words of a middle west producer, "Brothers, we are one year closer to a good year." Your present officers were elected at the March meeting of the Association held at the Rennert Hotel in Baltimore. On March 15th we held a county meeting at Centerville, Queen Anne's County (this is my home county) in conjunction with the County Agent, Mr. Ernest Grubb. This meeting was well attended and much interest exhibited in better beekeeping. Dr. Cory, our Secretary, and Mr. George J. Abrams were present and gave very interesting talks. We were also loaned two motion pictures by the G. B. Lewis Company, of Watertown, Wisconsin, "How Beeware Is Made" and "Putting the Bees to Work," and also a large number of slides by Dadant & Son, of Hamilton, Illinois. They were very good and received close attention by those present. Regular monthly meetings have been held in Baltimore during the year, except where field meetings were held, our July meeting being held at the Bee Culture Laboratory of the U. S. Department of Agriculture at Somerset, Maryland, near Washington. This was the most interesting meeting of the year and we were royally entertained by Mr. Hambleton, Mr. Nolan, Dr. Burnside, Prof. Berthoff, and others of the staff.

We Maryland beekeepers are missing one of the finest opportunities to learn more and better beekeeping when you do not take advantage of the assistance offered free by the Laboratories. Come to our meetings when held there or make a special trip, you will be fully repaid and will receive a hearty welcome from the staff and the bees.

The Kent-Sussex Fair is held each year at Harrington, Delaware, usually during the last week in July. At the suggestion of your President, this Association will next year give space and will offer prize money equal to our own Timonium Fair and they have also opened their lists to the Maryland exhibitors. During the past three years I have shown observation hives at this Fair. No prizes have been offered, but I was able to sell several hundred pounds of honey at each Fair. Delaware does not have a Beekeepers' Association, and it has been suggested that we allow any Delaware beekeeper who might wish to do so to join our Association. I think that we might assist them in forming an Association of their own, but I do not see where we can extend our services or the service of Maryland to them. At the Fair held in July we did hold a meeting at Harrington, Delaware, for the Delaware beekeepers and had a small number present.

During August a field meeting was held on the Eastern Shore at Williston, Caroline County, at the yards of Mrs. Sadie Ritter, and in September a night meeting was held by this Caroline unit in conjunction with the County Agent in the Court House at Denton. The success of this county unit of our Association is due to the untiring efforts of Mr. Abrams and the County Agent, Mr. T. D. Holder.

Our exhibit at the State Fair at Timonium was "only fair". We had a number of exhibits there, but very few exhibitors. The visitors coming into our exhibit were interested and we need the help and support of every member of the Association to make this show what it should be. This is the finest Fair we have to reach the Baltimore consumer. Bring your honey, exhibit your honey, and then come out and talk honey. It will help the Association and perhaps make us all better honey salesmen. Our Association meeting held there was poorly attended. We should have had ten times as many there as did come.

We have held regular meetings in Baltimore during October and November. The management of the Rennert have been most kind to us and we owe them a vote of thanks.

So much for the meetings. We have asked the Extension Service of the State for help and have the promises that we will receive some necessary help this year. Through the assistance of Dr. Symons, we reached Dr. Pearson, President of the University of Maryland, and Governor Ritchie. The program includes a man to teach a course in beekeeping at College Park, to work with the County Agents in arranging meetings and to begin the necessary inspection work in Maryland. Maryland has as good an Inspection Law as any state, but we have never had any funds to carry on. And I want to thank all of you for your interest in this work and also for the letters you wrote. They had a telling effect. Your President saw Governor Ritchie, personally, and talked over the proposition so that when it was taken up with him by Dr. Symons the subject was not entirely foreign with him. I also saw that he had Maryland honey for his Christmas breakfast.

We have also asked the Fair Association at Timonium to make some changes and improvements in the building where we hold our show. You will hear the Committee report later. I want to express my thanks to Mr. Andrews and Mr. Shearman for their work in getting the exhibits in place at Timonium and especially to Mr. Andrews, who assumed the caretaking of the table coverings and decorations. This might not look like a big task, but just some of you try it and you will soon find out that Mr. Andrews is a necessary part of our Timonium Show. Mr. Abrams was in attendance during the week and gave valuable information to the public about bees and honey.

Dr. Cory, our Secretary, has been untiring in his efforts to forward the work of the Association. We all thank you, Dr. Cory; also, a vote of thanks is due the "Primo Carnera" of the Beekeepers in Maryland, Mr. George Abrams. With practically no money to work with, he has done yoeman's work, travelled many miles and given much of his own time to forward the work. The meetings I have told you about are only those your President has attended. Mr. Abrams held several in counties on the Eastern Shore. There is still so much to be done that the work we have recorded seems small and insignificant. But, if we all work together, we can accomplish a great deal more in 1931.

REPORT OF THE SECRETARY-TREASURER

By ERNEST N. CORY, College Park

Beekeeping work in the State is now definitely on the threshold of a new development. Provision has been made for a part-time worker in Extension activities in beekeeping and the outline of the project has been submitted to the Department of Agriculture for approval. Just as soon as their approval is received, Mr. Abrams will devote half of his time to Extension work with individual beekeepers, beekeeping organizations, and club work. The balance of his time will be devoted to research in the problems of management. The work he has been doing in disease control will be continued, mainly on an educational basis in conjunction with his Extension activities. A definite allottment of $2,500 has been requested to be included in the budget for beekeeping work.

The opportunities for beekeeping in Maryland are abundant. Tulip bloom yields abundantly each year in the Piedmont section, and along the western shores of the Bay. In the fertile valleys of Western Maryland clover usually yields a surplus and on the Eastern Shore clover, especially sweet clover, likewise produces abundantly in the average year. In the far Western Maryland counties farm beekeeping is still practiced. Most farmers get sufficient honey for their own uses largely from buckwheat and from mountain flora. The market for Maryland honey is especially steady. Large quantities of honey are imported into the State and several of the larger commercial firms annually invade our market with honey that usually sells at a higher price on the retail basis than our own products. The extremely low prices prevailing in the far west this year apparently have no effect on our retail market. However, such prices will afford Maryland beekeepers an opportunity to secure honey for blending with their own product at a cost which will permit them to make a profit on the retail sales.

To my way of thinking, consumption of honey will never be increased to its maximum as long as honey remains in the class of a luxury food. Certainly honey purchased in hotel restaurants and on dining cars at fifteen cents for a two-ounce container, or $1.20 a pound, is decidedly in the class of a luxury food. Until honey can be obtained freely and at a reasonable price, the average patron of restaurants will accept the syrup substitutes that are served without added cost rather than satisfy or develop an appetite for honey.

The Beekeepers' Association has been advancing during the years in several ways, notably by the development of Eastern Shore chapters and by the splendid field meetings and the worthwhile meetings at short intervals in Baltimore. In point of membership, however, we have been slipping back steadily, possibly owing to the fact that your Secretary has been unable to put very much time on a membership drive. Every beekeeper ought to belong to the Association and, if he can be made to see the benefits accruing to him through the Extension activities of Mr. Abrams, I feel sure that the membership will increase. Most of the commodity farm organizations in the State have only one meeting a year. The Horticultural Society has a winter meeting and a summer meeting. On the other hand, a small and enthusiastic group of beekeepers continues to have eight to ten meetings each year. Possibly the very frequency of these meetings militates against a larger attendance at any one meeting. It might be well to consider a change in policy which would give us one winter meeting and two or three summer meetings each year. The Hotel Rennert has been most generous in furnishing us with a meeting place gratis, and it is my suggestion that the annual meeting recognize this kindness by a suitable resolution and a continuation of the policy of delivering to Mr. Davis a supply of honey for his personal use.

FINANCIAL STATEMENT—JANUARY 7, 1931
MARYLAND STATE BEEKEEPERS' ASSOCIATION

Balance brought forward		$52.63	
Dues deposited August 6, 1930		5.00	
G. J. Abrams for clerical work, Nov. 15, 1930	$ 2.30		
A. Howard Johnson for honey delivered to Mr. Davis, Dec. 8	5.42		
Maryland Farm Bureau Federation for annual dues, Dec. 8	20.00		
Totals	$27.72	$57.63	
Bank balance Dec. 6, 1930			$29.91
Dues received but not deposited			16.00
Total on hand			$45.91

Submitted by Ernest N. Cory, Sec'y-Treas.

ECONOMIC VALUE OF METHODS OF MANAGEMENT IN HONEY PRODUCTION*

By E. L. SECHRIST

Associate Apiculturist, Bureau of Entomology,
U. S. Department of Agriculture

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*Elaboration of talk given at Maryland Beekeepers' Association, January 7, 1931.

Introduction

Because few beekeepers can or will make the extended study necessary to enable them to decide for themselves what beekeeping practices are best, statistics on methods of management and use of equipment have been gathered, to determine which are economically valuable. Nothing new is discussed in this paper, but the recommendations made are of methods known to be good and to have a sound scientific basis. Nor are certain practices or equipment recommended as the best, or as the only means by which a beekeeper can be successful in honey production, but they are given as good examples of successful beekeeping practice which any beekeeper who knows his locality and the beekeeping conditions under which he works may adapt to his own use.

The whole system of modern commercial beekeeping in the United States is based on transforming the normal bee colony, which stores some honey and then swarms, into one that will continue to store honey continuously from the beginning to the end of the honey flow; and the best results cannot be expected if the practices recommended are followed blindly and without sufficient knowledge of how bees behave in modern hives and under management for honey production.

This discussion is, necessarily, a brief outline of methods and management, and can not take the place of the broad experience necessary for profitable honey production. It is, therefore, assumed that the reader is familiar with the general phases of beekeeping, such as are discussed in Farmers' Bulletins 447 and 1198, and in other general literature.

Apiary Management

Although innumerable methods of beekeeping practice have been evolved, many of which make use of this principle of converting the swarming impulse of the bee colony into the honey-storing impulse, all of them can be classified under two headings which, for the sake of brevity and convenience, are called in this discussion (1) The Free Range

Method, and (2) The Clear Brood-nest Method. Perhaps better terms may be found, but these will serve for the present.

The name, "Free Range Method," is therefore applied to plans of management in which the queen is not confined by the beekeeper to a particular part of the hive, while "Clear Brood-nest Method" is applied to those methods of management in which the beekeeper by some means confines the queen to that particular part of the hive in which he endeavors to maintain sufficient comb space to permit her to lay freely during that part of the season when her off-spring will be of value to him.

The Free-Range Method

The Free-Range Method has so little place in modern commercial beekeeping that it scarcely needs to be more than mentioned. It is the procedure of the beekeeper who selects a good location in a region where a good honeyflow is normally secured, places his bees on that location, puts on plenty of supers at the right time, and takes off the honey and extracts it when the bees have stored it. He permits the queen to range freely throughout the hive, and permits the bees to establish the brood nest where they will. This system appears to be very simple and is sometimes attended with success. But it may soon become complicated (and usually does) by crowded brood nests, much swarming, quick spread of brood disease, poor crops, poor wintering, and all the ills that beekeeping is heir to, as well as by cross bees which become a nuisance and a danger if Free-Range beekeeping is practiced anywhere except in isolated places, far from habitations and cultivated fields. This method can be used successfully only by the expert beekeeper in situations where its use will not interfere with the beekeeper's friendly associations with his neighbors.

The Clear Brood-Nest Method

This method of management may be considered in three divisions, any one of which will give good results if practiced intelligently. These divisions are: (1) The one-story clear brood nest, using only one brood chamber; (2) The two-story clear brood nest, using two brood chambers all the year; (3) The two-story clear brood nest, using two brood chambers for wintering and until the beginning of the honey flow, after which the queen is confined to one brood chamber.

Any one of the three divisions of this method will give good results if practiced intelligently. The one to be adopted depends largely on the operator's preference and equipment.

Plan 1

The Clear-Brood-Nest Method

Using a One-Story Brood Chamber

This plan of management is especially adapted to the production of comb honey, but can be adapted equally well to the production of extracted honey or to the production of both extracted and comb honey in the same apiary, a practice which is highly recommended. Statistics show better financial returns to beekeepers who produce some comb honey together with extracted honey, than is secured by those who produce only extracted honey.

The use of a one-story brood chamber in the Clear Brood-nest Method involves more handling of frames than does any other plan of management. It is based on the handling of separate frames as the unit of work, rather than on the handling of hive bodies full of frames. It is an intensive method of management, much liked by beekeepers having a small number of colonies, but also in use by those having as many as 1,800 colonies.

Even though this method requires separate handling of frames, it does not, in the hands of an expert, require more labor than the other divisions of the clear brood-nest method, although the novice can spend much time on it. It is a safe method and is valuable for the beginner who needs to come into close contact with the working of the bee colony in order to become an expert. After he has become a bee-master, he may prefer to handle hive bodies rather than frames.

The essentials of this plan of management may be summed up under the following twelve points:

1. Use Italian bees. If other races are used, slight modifications in method may be necessary.

2. Visit the colony every 8 or 10 days, giving the bees such attention as is necessary.

3. Use a one-story full-depth brood chamber. This may be modified by using a deep brood chamber, two shallow brood chambers, or one full-depth brood chamber and a shallow food chamber.

4. Clip queens, both to mark age and to prevent swarms leaving.

5. Use queen excluders, and keep the brood chamber full of all-worker comb and clear enough of honey and of sealed brood to insure plenty of room for the queen to deposit worker eggs.

6. Keep all colonies approximately uniform in strength.

7. Handle colonies so that the bees are always good tempered.

8. Use nuclei to provide a stock of queens and to make increase.

9. If a colony swarms, take away its brood and kill or cage the queen.

10. When a virgin fails to mate, either in a colony or a nucleus, introduce a queen of the previous year, just taken from a colony which insists on swarming and which has been given a virgin, thus avoiding the loss occasioned by having any colony long without a queen. Changing queens, whenever conditions indicate the need of it, is an important step in this plan.

11. Replace all queens two years old or more, if their colonies show signs of swarming. By the first of August, probably three-fourths of the colonies will have been requeened. Also requeen, during the season, any colonies that lack the desired uniformity.

12. By careful handling and frequent inspection, insure good control of American foulbrood and other bee diseases.

Collected statistics show definitely that the beekeeper who has all his colonies uniformly strong (see point 6 above) succeeds in getting a crop of honey much larger than that of his neighbor who, because of poor management, has, when the honey flow begins, colonies occupying from one to four or five hive bodies. Though a few colonies may give a high yield, the non-producers cut down the colony average very rapidly. Further, more work is required to care for colonies of irregular size than for those which are uniformly strong. Good queens and proper management will result in uniform colonies.

In the collection of statistics, many instances have been noted which illustrate the value (see point 5) of keeping the brood chamber in such condition that there is always plenty of room for the queen to deposit eggs. A striking example may be cited. In one apiary visited, the owner wanted to know why his bees were swarming and not working in the supers. Inspection showed that he had violated most of the requirements for having a clear brood nest, through attempting to follow, without understanding, the principles involved in the practices advised by a neighbor, who was a successful honey producer. The owner's colonies were in deplorable condition and much of his honey crop was lost. His average crop one year was 100 pounds per colony; the next year, 90 pounds. The neighbor whose management he tried to follow secured an average of 230 pounds the first year and 160 pounds the next. A visit to the neighbor, on the same day, showed his colonies in excellent condition, the bees working splendidly in the supers, a minimum of swarming, and the brood nest just what a brood nest ought to be. Bees can not begin work satisfactorily in the supers unless the brood chamber is full of brood right up to the top bar, with plenty of room for laying, and with little or no honey stored in it. Both the above apiaries were in exactly the same kind of territory, the low-yielding apiary having less than half the number of colonies in the other, while the labor used by each beekeeper was nearly the same.

Careful management (see point 12) almost insures against loss from American foulbrood. Numerous cases have been seen where one beekeeper kept his colonies practically free from this disease, while neighbors all around him suffered severe losses. This situation comes about because the beekeeper does not permit his bees or himself to scatter disease-carrying material from colony to colony in his own apiary.

Plan 2

The Clear Brood-Nest Method

Using Two Brood Chambers All the Year

This plan involves the same principles as were enumerated in the one-story plan, but applies them somewhat differently, the outline of work for the year being as follows:

The bees are wintered in two stories of perfect, old brood combs. In the spring, the brood nest should be in the upper story. This upper brood chamber must be kept clear for brood rearing, just as though only one story were being used. Thus, at the beginning of the honeyflow, this brood chamber should be full of brood from side to side and should contain but little honey. Some honey and sealed brood may have been put down into the lower brood chamber, or used elsewhere, but this lower brood chamber is not now to be used by the queen. At the time the supers are to be put on, the queen excluder is also put on above the second brood chamber and under the supers. As brood is immediately under the supers, the bees will go up and begin work at once.

After work is well under way in the supers, the bees are permitted to crowd the upper brood chamber with honey, forcing the brood nest down into the almost empty lower brood chamber, and making it possible in large measure to control swarming without handling frames. In the fall, this upper brood chamber will be full of fine honey for winter stores. This management permits the use as super combs of light-colored clean combs which have not contained brood, and having the queen excluder always on keeps all brood out of the supers.

This plan requires much less handling of frames than the first, and is successfully used by some good beekeepers, being particularly successful where the honey flow is of long duration. It deserves more attention than has been given it. Most failures in practicing this plan come about because the bees are permitted to begin storing honey in the upper brood chamber before they begin work in the supers, which causes them to be slow in entering the supers.

Plan 3

The Clear Brood-Nest Method

Using Two Brood Chambers Until the Beginning of the Honey Flow

This plan involves the same principles as Plans 1 and 2, and is preferred by many beekeepers because it reduces to a minimum the handling of separate frames, nearly all the manipulation being performed with entire supers or hive bodies. It is particularly valuable for use by those beekeepers who wish to handle their bees with the minimum number of visits and work, and in localities where the honey flow is short, or where there are several successive honey flows giving honeys of different color. It gives much less opportunity than Plan 1 for intimate personal study of the bee colony, but is well adapted to the experienced beekeeper who is already a beemaster and who now wishes to devote his time and effort to producing honey rather than to acquiring more knowledge concerning bees. While the plan is extensive rather than intensive, yet, in the hands of a good and careful beekeeper, it gives excellent results. Under this plan, it is not so essential that the brood be confined entirely to the upper brood chamber until the beginning of the honey flow, although that is where the most of it should be. The bees have been wintered in two stories. As soon as they are needed, supers are put on, and the queen is permitted free range of all the combs until the honey flow is well under way, when she is placed in the now almost empty lower brood chamber below a queen excluder. The second story, or upper brood chamber, which contains mostly brood, is then placed on top of all the supers, to remain there and be filled with honey as the brood emerges, and to be used for winter stores in the fall by removing the queen excluder and replacing this filled hive body of old dark combs in its original place on top of the lower brood chamber.

Considerable work may be saved and most colonies may be requeened with little work by removing this upper brood chamber from the old colony, as soon as the brood in it is all sealed and the combs mostly filled with honey, and placing it on a new stand, beside or behind the parent colony. To this "set-off," after supplying it with a bottom and cover, is to be given a selected ripe queen cell. When the queen emerges, she will have little room for laying, because this hive body will contain considerable honey and the bees emerging from the brood will soon store more. In consequence, this "set-off" should, at the end of the season, contain a small colony or nucleus, with a fine young queen, and with the combs nearly full of honey. When the supers are removed in the fall, this "set-off" is replaced above the queen excluder without troubling to remove the old queen in the lower brood chamber. After a few days the queen excluder is to be removed. Soon the young queen will go below and occupy the lower brood chamber. With plenty of room in which to lay, the young queen will soon fill all available space with brood. This will result in the necessary supply of young bees for winter.

Plan 3, Modified

A variation of the third plan of management is best adapted to localities having a long honey flow, beginning late in the season. In this modification, the bees are encouraged to build up rapidly in the spring, so that each colony can be divided into two parts early enough to enable both parts to build up to full colonies for the main honey flow. When fall comes two of these colonies are united, care being taken to see that sufficient stores are present for good wintering. In this way, half the number of colonies that are used during the honey flow are carried through the winter. It is significant that statistics show that no other plan of management has given such uniformly good returns for labor and investment. This plan, however, is not adapted to localities having only a short, early honey flow.

Conclusion

The twelve points given as necessary under the Clear Brood-nest Method of management are stated only in the barest outline in this paper, and need to be considerably elaborated to be of much use to the beginner in beekeeping. They are given to illustrate the fact that the basic principles underlying any good method of beekeeping management are always the same, and should be of help to the student of beekeeping methods. Anyone who understands these basic principles and their application is in a much better position to adapt a given system of management to his own locality and conditions than the person who lacks this knowledge and who depends upon the advice of someone unfamiliar with the local conditions.

REVIEW OF THE YEAR'S ACTIVITIES

By GEORGE J. ABRAMS, College Park, Md.

The year 1930 will be remembered by the Maryland beekeeper as a most discouraging and unproductive one. The severe and prolonged drought was responsible for an almost total failure of the clovers and other herbaceous plants to produce an adequate supply of nectar. This condition struck the clover region beekeepers a paralyzing blow, and, except in limited areas within the clover region, was enough honey produced to maintain normal colony growth and insure adequate stores for winter.

Those beekeepers located in the tulip belt were more fortunate. While suffering nearly a complete failure of the clovers they were able to harvest a normal surplus honey crop from the reliable tulip-poplar tree. However, the subsequent failure of the clovers and a dearth of fall nectar made it necessary either to feed back the harvested crop or buy sugar for winter stores. As sugar was cheap, beekeepers were advised to sell their honey and buy sugar.

Those beekeepers located on the Eastern Shore and in other clover regions, lacking the dependable tulip tree, were up against it when the drought dried up the nectar secreting plants. In nearly all apiaries feeding was necessary. The winter loss during the winter of 1930-31 will probably be the largest in a number of years.

During the past year eleven well attended meetings of the Association were held. Among these, the annual meeting held in conjunction with the Maryland Agricultural Society-Maryland Farm Bureau Federation convention, and the summer field meeting at the U. S. Bee Culture Laboratory stand out as the two best.

In the past nearly all Association meetings have been held in or near Baltimore. This year an effort was made to hold meetings in other counties so that beekeepers outside of Baltimore and its adjacent counties would have an opportunity to conveniently take active part in the affairs of the Association. The effort resulted in the holding of four very successful meetings on the Eastern Shore; three in Caroline County and one in Queen Anne County. A chapter of the Maryland State Beekeepers' Association was formed in Caroline County with Mr. Martin Voss, Denton, as President; Mr. Clarence Kern, Denton, Vice-President; and Mrs. S. B. Ritter, Denton, Secretary-Treasurer.

The Timonium Fair exhibit as a whole was below normal. This was probably because of the extremely dry season. The exhibit was not as large as usual and there were fewer exhibitors. The comb honey entries as a class were not up to the high standards set in former years; however, there was a gratifying improvement in the packaging of comb honey for shipment and in the quality of wax displayed. The usual high standards were maintained in the extracted honey classes. The exhibit as usual created much interest in the beekeeping industry.

Inspection work during 1930 tends to indicate that American Foulbrood is more prevalent than it was formerly believed to be. In previous years inspection was limited to those apiaries for which a request for inspection was received. This year an effort was made to visit not only those beekeepers who asked for an inspection, but others who did not suspect infection to be present in their colonies. As a result, a number of beekeepers were surprised and chagrined to learn that they were harboring American Foulbrood.

Six counties were visited and four were found with diseased apiaries. In all, thirty-seven (37) apiaries were inspected and twelve (12) were diseased. Five hundred and thirty-five (535) colonies were inspected and 11% or 59 colonies were found to be infected.

In commercial apiaries where the per cent of infected colonies was high, treatment was allowed (not advised) and the beekeepers were given the opportunity to clean up the infection by "shaking". In one case a quarantine yard was used with apparent success. In cases involving the infection of only a few colonies, "burning" was ordered. This first called for fumigation of the adult bees, secondly for the burning of dead bees, all honey, wax, brood, and frames, and, thirdly, for the flaming of the inner cover, bottom boards, and hive bodies. "Burning" is new to the Maryland beekeeper and the way in which he has readily appreciated the economy and practicability of "burning" and has cooperated in the work is a tribute to the intelligence of the men dealt with and showed a gratifying sense of confidence in the inspector.

A GREATER BEEKEEPING INDUSTRY

SUMMARY OF REMARKS

By Dr. T. B. Symons

Director, Extension Service

I am happy to accept this opportunity to address the Maryland Beekeepers' Association on the subject, "A Greater Beekeeping Industry". I am pleased to address a group that perhaps has greater ability than any other group in connection with our Farm Bureau Meetings by virtue of their ability to work with bees for certainly any one who can appreciate the tremendous efficiency of the honey bee and cause him to work for him has unusual attainments. I well recall the first meeting of this Association in the Fifth Regiment Armory twenty-two years ago when we undertook to bring the beekeepers together with a view of developing greater interest in the industry. It has been a pleasure to see the Association grow and I want to congratulate your officers upon the progress made. While I have not been able to attend your field meetings, as well as your Annual Meetings in recent years, I have followed the activities of the Association with keen interest. It is gratifying that you have retained the interest of such men as I see in this audience who have unselfishly served the industry during these many years.

I congratulate you upon the activities of your Secretary, Dr. E. N. Cory, as well as Mr. George J. Abrams, who are doing their best to aid the industry.

I believe that the exhibits you have made at the Timonium Fair and elsewhere have been a stimulus to the industry. Advertising pays and exhibits of bees, as well as honey, always awaken an interest in the minds of the public.

I wish all of you could have heard the address delivered by Professor Hootman, of Michigan, before the Horticultural Society yesterday. He presented the great subject of pollination of fruit trees in an excellent manner and demonstrated conclusively the important role that bees play in pollination of our fruits, as well as other crops.

In this connection I am reminded of the story of the fellow who said he could estimate the crop of clover seed by the number of old maids that lived in the village. The basis of his argument was as follows: The greater the number of old maids living in a community, the greater the number of cats; the greater the number of cats, the less field mice and the less field mice, the greater number of bumblebees, and the greater number of bumblebees, the greater the quantity of clover seed.

Prof. Hootman pointed out that after a rather exhaustive study he estimates that a fruit orchard should have at least one colony of bees for every acre of orchard. Can we estimate the number of acres of orchards in Maryland and then realize the tremendous demand there is for bees? I believe that this Association can well encourage proper development of the industry so that you may be able to supply this demand on the part of the orchardists of the State.

In thinking over the developments in the industry, I asked Dr. Cory and Mr. Abrams if they could not arrange a State map showing the location of apiaries in the State at the present time. I take pleasure in presenting this map, which illustrates the distribution of colonies as revealed by questionnaires that were sent out by Mr. Abrams last spring. We cannot expect that this indicates all apiaries or colonies of bees, but it at least represents the apiaries conducted by men who are interested in the industry and who were willing to answer the questionnaire. You will also note that we have been able to locate on this map the known existence of disease. Mr. Abrams tells me that of the 37 apiaries inspected, 12 were found to be diseased and in this lot of 535 colonies 59 were diseased. He also reports that more than 40 colonies were treated, while 19 were burned.

Due to lack of funds, we have not been able to have this inspection work conducted as we desire, but it is gratifying that we have been able to make a start in this direction and I am pleased to advise that we have just approved a co-operative project with the Department of Agriculture wherein Mr. Abrams will devote part time to Extension activities in helping beekeepers.

We should easily double the number of colonies of bees that are now being kept in Maryland and, while I am not advocating an undue expansion of the industry, yet I firmly believe there is a reasonable opportunity for greatly increasing our bee population.

Incidentally we are now thinking in terms of a five-year program for agriculture and as a feature of that program we will endeavor to reduce our wheat acreage and as a substitute we will probably increase the acreage devoted to buckwheat and similar crops that should furnish food for bees. It seems to me that beekeepers should consider how they can best utilize the dark-colored honey as well as the light.

I believe that this Association, with Dr. Cory and associates, should construct a five-year program for this industry as it would be a stimulus toward greater accomplishments.

I want to congratulate the President and members of the Association upon your active interest in trying to secure additional funds for the promotion of the industry.

When presenting our budget recently to Governor Ritchie, he mentioned the fact that he had heard from a large number of beekeepers and I feel sure that the Governor will be sympathetic toward trying to do something to further help the industry. As you know, we have a good State law which was passed more than ten years ago. I believe that this law will meet all necessary requirements of legislation. All we need is more adequate financial support to provide for the inspection of apiaries to control disease and the general educational promotion of the industry.

There are many other features that I might refer to, but there is one in which I should like to enlist your co-operation, namely, in the great field of adult education. Our rural people are seeking a wider and deeper knowledge and information on subjects other than agriculture and home economics. In fact, there is much information concerning the bee industry that can be most appropriately disseminated among the rank and file of our people. Aside from this, I am hoping that our Service may be placed in position to bring information in the various arts and sciences to the rural people of Maryland. The phrase, "Is it not as important to be something as to have something?" appeals to the aesthetic and cultural instinct of our people. From an economic, social and psychological standpoint our rural adults need and desire more information. In these days of modern inventions, our people are getting smatterings of things that are stimulating their desire for more fundamental information.

We pass through the inquisitive period of our life when young and after about the age of thirty-five we begin to enter into the reflective period when we desire mental stimulus. It is believed that the adult educational movement will satisfy this need. We will appreciate the co-operation of this Association in promoting a general program of this character.

In conclusion, let me again express my appreciation for the fine co-operation that you have given to our Service and Institution and the forces who have been working with you. Let us determine to largely increase the industry in order that it may render a greater service to the people of our State and furnish food that is unusually attractive and useful. Let us hope that more ample provision can be made for encouraging and protecting the industry throughout the State.

REPORT
of the
Maryland Vegetable Growers' Association

THIRTEENTH ANNUAL MEETING

FIRST SESSION

Wednesday, January 7th, 1931

The first session of the thirteenth annual meeting of the Maryland Vegetable Growers' Association was called to order at 10.00 A. M. by President Wm. N. Eyler at the Lord Baltimore Hotel, Baltimore, Maryland. After welcoming the members assembled, President Eyler proceeded with the program by introducing Mr. F. W. Geise of Rochester, New York.

SPINACH FOR MARKETING AND CANNING

FRED W. GEISE

American Can Company

It is a well known fact that during the past 10 years the volume of spinach grown for canning has steadily increased. It is also a well known fact that the Baltimore District was for a good many years the center of production, and now the center of production has shifted and Maryland packs less than 1/8 of the total pack.

The speaker understands that we are to discuss the subject of spinach production during the next 20 minutes.

In order to discuss the subject to best advantage let us analyze and discuss separately the different factors that influence production. First let us enumerate the natural conditions we have—

1. Perhaps we may ask ourselves whether or not we consider Maryland, and in particular the Baltimore District,

as having desirable climatic conditions for good spinach production. The answer is obvious. Maryland was in the past the center of spinach production and still is a factor in production. Spinach as a crop requires for best growth, cool moist conditions. Hence we have ideal seasonal conditions both in the fall and spring. The winters are sufficiently mild to permit the overwintering of a crop. There are few sections in the United States as admirably adapted to spinach production as Tidewater Maryland.

2. What about the soil conditions? It is a well known fact that spinach is a gross feeder and responds to soil of high fertility and heavy fertilization, especially nitrogen. Our soils for the most part are of such a nature that they respond to good treatment. The system of cropping should be such as to bring maximum returns when the soil is in good tilth.

3. Are the production hazards with respect to insects and diseases greater in Maryland than elsewhere? Lice may attack the fall crop and do considerable damage. The pest, however, may be controlled in the early stages of infestation with nicotine dusts. Cabbage worms and cabbage loopers sometimes appear in the fall, however, these insects disappear upon the approach of cold weather. The "beet leaf miner" is not considered a serious factor in Maryland.

From the standpoint of disease hazards there is one disease, namely, "Mosaic" or "spinach blight," which occurs sufficiently often in the fall and does enough damage to the crop that it is safe to recommend the use of a blight resistant variety (Virginia Savoy), as a safety measure. "Leaf spot" or "leaf mold," the spread of which is largely responsible through warm humid weather conditions, cannot be controlled readily in the field. If the crop is sufficiently advanced to permit harvesting it is best to cut the crop thus reducing the potential loss.

The factors just mentioned are more or less beyond our control and it is largely a matter of adjusting the crop to take advantage of the prevailing conditions.

The following factors on the contrary are for all practical purposes subject to control and, *gentlemen,* if spinach is to continue to be an important canning crop it is up to you to take advantage of every known production factor consistent with high yield and good quality.

1. First let us consider the question of varieties. Experiments at College Park show conclusively that the more important varieties may be grown successfully in this region.

The Savoy leaf types may be used either for canning or shipping purposes. For fall planting, a Bloomsdale or Virginia Savoy should be used. The Virginia Savoy, particularly where blight (Mosaic) is prevalent. Some of the flat leaf, short season varieties may also be grown in the fall, for example: Viroflay, Flanders, Giant Eskimo, Gaudry, Prickly or winter and Broad leaved winter. For the overwinter crop, hardy varieties such as Virginia Savoy may be used. Crops that are over wintered shoot to seed very quickly in the spring and are classed as among the short season varieties.

Varieties for the spring crop may be selected from the long standing or the slow growing group, among which are: Longstanding Bloomsdale, Old Dominion, Princess Juliana, Long Season, and Triumph. Among the flat leaf types are: Nobel Giant, Giant Thick Leaved, Zwaan's Hollandia, and, of course, King of Denmark is extremely long standing.

Three seasons' experimental work at College Park on the canning quality of different varieties gave some very interesting results. A comparison of the varieties grown under similar conditions showed slight differences. Subsequent work with the variety Virginia Savoy showed that one may expect greater differences in quality within a variety dependent on the condition of the raw stock, than among the different varieties.

The following points should be considered in the production and handling of spinach for canning:

a. The maximum yield of trimmed spinach per unit of field run is greatest during the early part of the fall crop. From the standpoint of production and yield of trimmed spinach the overwintered crop is the lowest yielder under conditions similar to those in Maryland.

b. The quality of canned spinach is directly related to the raw stock. High quality of raw stock goes to make a high quality canned product.

c. A decrease in moisture content of the raw stock may be expected with the seasonal advance of the crop. The spring crop has a relatively high moisture content, which is, of course, associated with tender, succulent, leafy material.

d. To obtain the highest quality possible from a given lot of raw stock the product must be handled with the greatest possible speed from the time it is harvested until canned.

The question of the relative amount of leaf stem in spinach is an important consideration. Different varieties no doubt have varying proportions of leaf stem to leaf area, but the main consideration is distance of planting. If the plants are crowded the proportion of leaf stem increases per ton of spinach. The minimum leaf stem material is obtained when the plants have sufficient room for development. Excess leaf stem is undesirable because the resultant product is unsightly.

Conclusion—

The speaker has attempted to point out certain production factors which influence the quality of spinach. While we cannot control such factors as weather, native soil conditions, it is however, our business as growers to adjust ourselves to the conditions at hand. Choose the varieties best adapted and practice a proven system of soil management, which includes a good system of crop rotation.

Be prepared to control infestations of lice by dusting.

If you have trouble with "spinach blight" (Mosaic) use Virginia Savoy as a fall crop and Old Dominion as a spring crop.

Whether you as growers are producing spinach for the market, or the cannery, you owe it to the spinach industry and yourselves to properly trim your spinach. The speaker has repeatedly seen spinach delivered to the cannery that was rejected by the fresh market. The canner is to be blamed for accepting such a product and you as growers should not expect him to buy it. Such a practice if continued will react unfavorably toward Maryland canned spinach. There should be no distinction made in so far as the raw product is concerned between spinach for market and spinach for the cannery.

The high quality spinach that can be grown in the Baltimore area is equal in quality to the spinach grown anywhere. Therefore, the future of the spinach industry in Maryland, literally speaking, is absolutely within your control as growers and canners. It is merely your problem to take full advantage of the knowledge and conditions you have at hand.

STANDARDIZATION AND DESCRIPTION OF VEGETABLE VARIETIES

VICTOR R. BOSWELL

U. S. Department of Agriculture

For several years there has been much confusion upon just what characteristics a certain variety of vegetable should have. In the past there has been a considerable lack of agreement upon what varietal characteristics should be and there has been no authentic standard which seedsmen could use as a guide in producing seed stock and which anyone could use as a basis for his conception of a variety. Ample evidence of this lack of agreement and the absence of such standards is given by the fact that growers obtain so many differently appearing products all under the same varietal name. Vegetable growers, canners and seedsmen have long recognized the need of definite standards and adequate descriptions of our most important varieties and they have further recognized that we can expect uniformity in the offerings of seed in the trade only after such standards have been established.

Active work was begun upon a standardization and variety description project two years ago by the Office of Horticultural Crops and Diseases in the Bureau of Plant Industry.

Before definite plans of procedure were made, however, care was taken to canvass the opinion of technical workers, vegetable growers, seedsmen and canners to determine just what they most needed in the way of standardization and description of vegetables, results upon which could be obtained in a reasonably short time. The almost unanimous opinion was that instead of attempting to describe and classify all known varieties and strains that it is more important to have as quickly as possible a definite national standard and an adequate description of that standard for each one of a limited number of the most important varieties of our principal vegetable crops. It is generally believed that a stated amount of effort will thus yield more valuable results if confined to a limited number of commercially important varieties than if the same amount of work were spread out over all known varieties of a certain crop.

In order to set up a standard which will be useful all over the country, it is necessary to work on a nation-wide scale, carrying our studies into as many of the important vegetable producing regions of the country as possible. The varieties for which standards are to be established must be grown over a wide range of conditions so that it can be definitely determined how they behave and what their characteristics are in different locations if the results of such a program are to be of nation-wide value. From the beginning, it was realized that some rather serious difficulties would be encountered. It was pointed out that it would be difficult to establish a standard that would be accepted nationally because there would be so much disagreement about it all over the country and various persons would be reluctant to accept a standard established by someone else. Therefore, precautions have been taken to prevent purely local or provincial opinions taking the place of broad national viewpoints. From the very first, all workers involved in this project have kept in close contact with the industries they are trying to serve. The opinions of various qualified vegetable growers, canners, seedsmen and experiment station workers in many different parts of the country are being utilized and the final results are intended to show as accurate a cross section of the country's opinion as it is possible to obtain.

In order to obtain this national cross section of opinion as a basis for our decisions upon a standard and in order to study the different varieties under a wide range of soil and climatic conditions, we have enlisted the generous cooperation of nineteen different state experiment stations ranging from the Canadian Border to the Gulf of Mexico and from the Atlantic to the Pacific Oceans. There is so much interest in this project on the part of state experiment station workers that we have not been able to expend our work rapidly enough to keep up with the offers of cooperation that we have received. The excellent help of the state workers has contributed very greatly to the value of the results we have obtained so far and we gladly acknowledge the perfectly splendid spirit of cooperation that has prevailed throughout our work.

The standard to be established for each variety is to be not a mere dream of an ideal specimen that would be so perfect as to be practically impossible of attainment, but it is to be based upon and illustrated by material that is actually in existence at the present time. This does not mean necessarily that our standards will be an exact 100 per cent illustration of the total population of any strain as it exists today, but it does mean that our standards will be established and illustrated by material actually selected from existing strains and will be of a standard of excellence which is quite possible of attainment. Instead of ordering seeds indiscriminately from hundreds of dealers who are not actual seed producers, we believe we can obtain practically all the good stocks by locating actual sources of production of seed and ordering from these comparatively few sources. With the assistance of the Vegetable Research Committee of the American Seed Trade Association, a wide search has been made of American and European sources and hundreds of stocks have been obtained in the manner described.

In studying the different stocks of a variety we make an effort to find a strain which will approach our ideal closely enough that we can select from it a large number of specimens which will be suitable for purposes of description and illustration. Of course, no one has ever found a strain of any variety which we could call absolutely perfect, but we have been able, so far, to find at least one strain of each variety from which adequate material could be selected as a basis for illustrating the ideal or the standard existing in the minds of the various workers. As indicated above, we have purposely avoided setting standards that are unreasonably high. The standard descriptions are based upon averages of large numbers of individual plants which conform closely to a reasonably high ideal but which, of course, are not perfect. There would be no object in setting our standards so high that they could not be obtained in practice.

The field work has recently been completed upon eighteen of the most important commercial varieties of peas, including both market garden and canning sorts. The varieties are:

Alaska
Yellow Admiral
Nott's Excelsior
Surprise
Gem
Little Marvel
Improved Advancer
Sutton's Excelsior
Thos. Laxton
Davis Perfection
World's Record
Alderman
Gradus
Daisy
Telephone
Laxton's Progress
Laxtonian
Hundredfold

The pea variety studies were carried on at Washington, D. C., and at Sturgeon Bay, Wisconsin.

Two years' work has been completed upon cabbage varieties at Washington, D. C.; Norfolk, Virginia; Clemson College, South Carolina; Winter Haven, Texas; Davis, California; Madison, Wisconsin; State College, Pennsylvania, and Greeley, Colorado. The varieties which have been studied to date are:

Early Jersey Wakefield
Copenhagen Market
Early Winnigstadt
All Seasons
Late Flat Dutch
Glory of Enkhuizen
Danish Ballhead
Wisconsin Hollander

The tomato varieties under consideration are:

Earliana
Bonny Best
Globe
Marglobe
Early Detroit
Gulf State Market
Stone
Greater Baltimore
Santa Clara Canner

The work is in progress in charge of the various collaborators located at Ithaca, New York; East Lansing, Michigan; Lafayette, Indiana; Davis, California; Weslaco, Texas, and also at Washington, D. C.

The past fall and winter stocks of beet, carrot and spinach have been collected from numerous sources in this country and in Europe. A total of about sixty strains of beets will be planted this season, including the following varieties:

Extra Early Egyptian
Early Eclipse
Detroit Dark Red
Long Smooth Blood
Crosby's Egyptian
Edmand's Blood Turnip
Crimson Globe
Half Long Blood
Early Wonder

In addition to the work which will be in progress at headquarters at Washington, D. C., collaborators in California, Texas, and Virginia will be working upon carrots. About fifty strains of the following varieties of carrots are on hand:

Oxheart
Early Scarlet Horn
Chantenay
Danvers Half Long
Nantes or Coreless
Long Orange
French Forcing

and about sixty strains of the following varieties of spinach will also be studied for the next two or three years:

Virginia Savoy
Triumph
Victoria
Princess Juliana
Nobel or Gaudry
Bloomsdale or Norfolk Savoy
Long Standing Bloomsdale
Viroflay
Prickly or Winter
King of Denmark

In addition to the states already mentioned who are cooperating on beets, work will be in progress on the last named crops in Louisiana, Minnesota, New York and possibly other states.

We have been rather pleasantly surprised to find that there has been very satisfactory agreement in the ideas or ideals in the minds of the various collaborators with reference to any one variety under consideration. The individual collaborators each record certain data in detail, record their personal impressions and take photographs of the material they are studying, all by a prearranged plan and a uniform system, so that the results of all will be on a basis that they can be accurately compared and studied. After the season's work, all collaborators gather together and go over the entire mass of data in detail and thoroughly discuss and criticise all results and opinions. The opinions of these workers from various points over the country have agreed so well that after two years' work it has been found possible to prepare descriptions of the tentative standard or ideal for each variety of cabbage, tomatoes and peas. These tentative standards are not to be considered final, however, but we are setting them up only to be criticised and studied further during the third year of work in the season of 1931. These tentative standards and descriptions are to be further subjected to the criticisms of qualified growers, technical workers and seedsmen this winter so that we may consider their comments along with our own conclusions in this next season's work. The tentative standards will be before the various collaborators during the work of 1931 and each description will be carefully checked by the behavior and appearance of each variety in the field in order to determine how useable and how dependable the description is and to complete whatever details may be lacking. We thus plan to have our results tried and tested before they are released for publication because we know that a standard and a description that won't work in practice or that does not have the confidence of the industry back of it will be of little or no value.

As one crop or a group of varieties is completed, additional crops and varieties will be added to the project until all of the more important ones have been considered. By the time we have been able to "go the rounds" once it will be necessary to revise and bring up to date standards for crops worked upon earlier and there should also be an opportunity to add to the lists some of the less important varieties. It will also be necessary to add descriptions of important new varieties which certainly will appear on the markets from time to time. It is obvious from these last remarks that the task is one which will never be finished but must continue indefinitely in order to meet the changing requirements of the industries interested in varieties of vegetables and in order to keep abreast of the times.

It is believed that the establishment of authentic standards which are adequately illustrated and described will accomplish a great deal to encourage the production of stocks of higher degrees of excellence and will afford valuable guidance for those who are interested in improving the nature of their stocks. There should also be a tendency for seed producers to concentrate more upon varieties of importance and there will be far less argument and confusion about just what characteristics any important variety should show.

CANTALOUPE GROWING IN MICHIGAN

By J. B. EDMOND

University of Maryland,

About 3,500 acres of muskmelons are grown annually in Michigan. Approximately 45 per cent of this acreage is located in Berrien County in the South West portion of the State with producing centers at Coloma, Benton Center, Millburg, and Benton Harbor. The close proximity to the Chicago market and large areas of sandy soil have combined to centralize the industry in this district.

Within recent years various problems have forced themselves to the growers' attention. A preliminary survey showed that these problems involve production, marketing and prices. A difference of opinion existed on the best variety to grow for profitable production. Practices in the use of commercial fertilizers varied greatly. Even on the same type of soil and under the same system of crop management different mixtures were employed. Our survey showed that the disease situation was a serious problem. Yet no definite control measures were practiced.

A very common complaint of the growers was the gradual or somewhat rapid decline in price as the season advanced. Since prices are highest at the beginning of the shipping season many growers made an effort to place most of the crop on the early market. As a result the market was flooded with melons of poor quality. The market would collapse and the price would fall. And in many cases the remainder of the crop, no matter how high the quality, would fail to restore prices to a profitable level. Another factor affecting prices was the severe competition of western cantaloupes, particularly those from Colorado. Whenever shipments from the west were heavy and the quality good, prices of Michigan melons were usually low. This lack of definite information on varietal characteristics, fertilization, soil management, disease control and on the possibilities of making competition from the west, a less vital factor led to a detailed study of the situation.

The varietal tests indicated that a variety to be profitable in Michigan must mature early, and produce large fruits of high quality.

In comparing the yields of four representative growers of Hoodoo melons for a series of eight years, we found that the production of both early and large fruits is desirable. Grower No. 1 produced 17.7 per cent of his crop early and 76.5 per cent of his crop large, while Grower No. 3 produced 7.0 per cent early and 85.0 per cent large. Grower No. 1 averaged $1.37 per crate and Grower No. 3 $1.27 for the eight years studied.

Varieties Raised in Michigan

Osage. About 25 per cent of the acreage is given over to the raising of Osage. Within recent years this variety has been losing in popularity, being rapidly replaced by Bender. Though many growers claimed it to be a profitable variety our yield records showed that it is a poor yielder in comparison to the Hoodoo. On the average the fruit graded out poorly. These poor grades were due sometimes to severe cracking in wet weather, sometimes to difficulty in determining the proper stage of maturity but more frequently to the production of a large number of culls. It is not a good shipping melon nor one possessing high quality. The only redeeming characeristic is its earliness.

Bender. Since 1923 this variety has supplanted the Osage to a considerable extent. The fruit grades out well and seldom cracks in wet weather. It thrives best and attains its highest quality on the heavy sandy loams.

Hoodoo. This is the most popular variety. It is a good yielder. The fruits remain firm for a considerable period after shipping. They grade out well and possess high quality, but mature somewhat late, requiring thirty-five to forty-five days to attain marketable size.

Hearts of Gold (Morrills strain). This strain is similar in type and plant characteristics and yielding ability to the Hoodoo. According to our sugar tests it is the highest quality melon raised in Michigan. Like the Hoodoo it grows best on light types of sandy loam.

Honey Rock. This variety is a recent introduction from Indiana. The fruit grades out well and is an excellent shipper. Under Michigan conditions the variety is susceptible to "damping off" both in the forcing bed and in the field. It thrives best on heavy sandy loams.

Golden Champlain. This variety matures fruits very early and of high quality. However, they possess poor shipping characters and are recommended for retail trade or roadside market only.

Seed Selection

Though members of associations obtained seed from the association many non-association growers saved their own seed. This was practically true of the Bender and Osage growers. In many cases seed has been selected from plants where promiscuous crossing has taken place. In others, fruits have been selected for one characteristic without due consideration to others. In nearly all instances the fruit and not the plant has been considered the unit of selection.

The department of horticulture, as a part of its extension program, has pointed out the advisability of using the plant as the unit of selection, and since earliness and size is important the selection of all fruits from plants that mature a large portion of their fruits early is advised.

Manurial and Fertilizer Practices

For many years manure was the only source of humus and nutrients used in maintaining fertility. Annual applications varied from ten to twenty tons per acre. However, the scarcity of manure has led to the growing of green manuring crops and to a greater use of commercial fertilizer. Alfalfa, red clover, sweet clover, vetch and rye, oats and barley are among the important green manuring crops. To some extent the choice of a green manuring crop depends on the length of the rotation. Growers who practice long rotations obtain satisfactory yields of melons from land which has grown alfalfa or sweet clover for a number of years. For growers who practice short rotations rye or rye and vetch seems to be most satisfactory, because of its adaptability to light types of soil, rapid growth and resistance to cold.

Manure is either applied broadcast by means of a spreader before the land is plowed or applied in furrows at the intersection of the planting marks and then covered with a plow.

Practices in the use of commercial fertilizers varied greatly. Some growers used nitrogenous fertilizers alone, others acid phosphate, usually as a supplement to the manure, others used complete mixtures applied in hills, broadcasted or both. A series of fertilizer investigations during 1926 to 1928 inclusive, showed that three hundred pounds of a 3-12-4 mixture, applied in hills at time plants were set in field, produced a greater number of early and late fruits than applying six hundred pounds of the same mixture, broadcast. Manure applied in hills was especially beneficial on soils deficient in humus. Commercial fertilizers applied on land heavily manured or which had grown alfalfa for two years increased earliness of yield—but not total yield. As a result of the fertilizer work a complete mixture containing three to four per cent nitrogen, twelve to sixteen per cent superphosphate and four to six per cent potash applied in hills at the rate of 300-400 pounds per acre is recommended.

In one case liming was beneficial. The soil, a fine sandy loam, had failed to produce a satisfactory crop of alfalfa for many years. On the limed plots the vines were more vigorous, less susceptible to certain diseases and bore earlier fruits.

The Importance of the Honey Bee

Many growers failed to realize the importance of bees to melon production. We demonstrated the necessity of bees by caging certain plants during the season of 1927. These caged plants seldom set more than one or two fruits.

Disease Control

In former years Michigan melon growers practiced crop rotation. More recently areas available for long time rotations have decreased and melon plantings have increased. These practices have combined to promote conditions favorable for the spread of disease. In many cases melons are grown successively on the same land for three to ten years. Furthermore, climatic conditions in some seasons are unfavorable for the growth of cantaloupes. Frequent rains, long periods of cloudy weather and high atmospheric humidity have combined to spread diseases rather rapidly. In 1926 and 1927 experiments were conducted to determine the comparative effectiveness of Bordeaux mixture and copper lime dust. Our results showed that Bordeaux mixture produced a larger number of fruits in terms of size, total yield and earliness of yield than those treated with copper lime dust. The sugar content of fruits from vines treated with Bordeaux was also greater.

In 1928 Bordeaux mixture was the only material used. The first application was made when the plants were in the forcing bed and the time of the second was varied to determine the effect of this material at various stages of plant growth on earliness of maturity and total yield. Sprays applied when the crown set of blossoms is being pollinated markedly decreased early and total yield. The recommendation now is to make the first application when the plants are in the forcing bed—just before setting in the field; the second either when the vines are eight to ten inches long or when the fruit has attained the size of a hen's egg and succeeding applications at intervals of ten days.

Anthracnose is probably the most serious disease in Michigan melon fields. Hot rainy weather usually results in epidemics. "Damping off" is a serious seedling disease and usually occurs in the forcing bed. Bacterial Wilt, Angular Leaf spot, Mosaic and Rust are also troublesome. Insect pests are striped cucumber bettle, squash bug, melon aphid, and cut worms.

Studies on Price Trends (1920 to 1927, Inclusive)

Data for determining price trends were secured from the daily sales record of two shipping associations. In a good year these exchanges ship approximately 50,000 crates of the Hoodoo variety. Our studies showed that with the exception of the year 1920, which was marked by a high and upward trend in prices, the general price trend of the years (1921 to 1926 inclusive) had been downward. Sometimes this was due to overproduction but more frequently to the presence of low quality fruits in the market. The lowest level was reached in 1926 when the quality of the fruit was poor, even though the production was light. In 1927 there was a marked return to normal prices. The quality of the fruit was exceptionally good and the market demands heavy. When quality is high the demand is increased and growers may expect prices to increase or remain at a high level. In fact, quality is the most potent factor affecting prices.

Advantages of Co-operative Marketing

About fifty per cent of musk melons produced in Berrien County are marketed through shipping associations. This situation permitted comparison of gross returns to growers in the association with those to independent sellers. The study showed that although the non-association member started to market his crop from four to nine days earlier than the association member, he averaged 17 cents less per crate during the eight year period. Marketing through shipping associations would seem to be the more desirable practice.

After appointing committees on Nominations, Auditing and Resolutions, the meeting was adjourned.

SECOND SESSION

Thursday, January 8th, 1931

THE PRODUCTION OF CERTIFIED SWEET POTATO SEED STOCK

BY R. A. JEHLE, Specialist in Pathology,
University of Maryland

In Maryland the production of sweet potatoes is a very important industry, 1,250,000 bushels valued at $1,125,000 being produced in the state in 1929 from 10,000 acres and 660,000 bushels valued at $594,000 being produced from 10,000 acres in 1930. This large reduction in yield and value in 1930 was caused chiefly by the severe drought which was prevalent during the growing season. Losses from diseases in 1930 were estimated as follows: Storage rots, including Blackrot, 15 per cent; Blackrot, field losses, 1.5 per cent; Stemrot, 1.0 per cent; Scurf, 0.5 per cent; Footrot, trace and Pox, 0.5 per cent. These losses can be greatly reduced by the use of good seed; the practice of sanitation, which includes seed selection and treatment, changing of soil in the seed bed and the practice of rotation when diseases are present in the soil; better storage management, including construction of better storage houses and improvement in storage conditions, especially temperature and humidity regulation.

The certification of sweet potatoes is a very important step in the control of sweet potato diseases, since it assures to the sweet potato grower a reliable supply of seed which is practically free from mixtures and diseases. The diseases which are most prevalent in Maryland sweet potato seed are Stemrot, Blackrot and Scurf.

Although Stemrot is responsible for losses from one to two per cent of the crop in Maryland it is much more destructive in some of the neighboring sweet potato growing states, such as Delaware and New Jersey. Much of the sweet potato soil in these states has become infected with the organism which causes Stemrot and it has become very difficult to grow sweet potatoes free from the disease in those communities. Maryland sweet potato growers should be very careful to avoid planting seed infected with Stemrot. If they do not their fields will soon become similarly contaminated.

Stemrot is very destructive to the vines of the sweet potato. It may attack them in any stage of growth, but is most destructive when the vines are attacked in the early stages. Vines which are attacked in the seed bed usually die soon after they are set out in the field and stemrot is often responsible for poor stands. Vines which are attacked at later stages may be weakened and produce potatoes, and it is these potatoes from the diseased vines which carry the disease over from one year to another. Stemrot may be recognized in the vines by a yellowing of the leaves beginning at the basal end of the vines and gradually extending to the tip. When diseased vines are cut black tissue will be found just beneath the outer skin. This blackening extends into the roots and potatoes produced on diseased vines show a blackened ring in the flesh when cut across. However, the presence of blackened rings in sweet potatoes does not necessarily mean that stemrot is present, since other conditions may produce the same effect. Of the varieties grown commercially in Maryland, the Little Stem Jersey seems to be much more susceptible to stemrot than the Big-stem Jersey.

Blackrot is a sweet potato disease which is also very destructive, sometimes even more destructive than stemrot. When it attacks the plants in the seedbed they often also die soon after they are set out like plants affected with stemrot, but the greatest damage from blackrot is to the potatoes themselves. On the potatoes blackrot produces black circular sunken spots which are at first very small but which may increase in size until the entire potato is involved. The disease also extends into the flesh where it produces dark brown decayed areas with a distinct line of demarkation between the diseased and healthy parts. However, the disease affects even the parts of the flesh which appear healthy, since a bitter disagreeable taste extends throughout the entire potato. Blackrot is principally a storage disease, although infection usually takes place in the field. When the roots are dug the blackrot spots are usually small and are often overlooked, but when these potatoes are put into storage the disease often develops rapidly and becomes very conspicuous, giving the grower the impression that infection took place in the storage house. It is possible under certain conditions for blackrot to spread from one potato to another in the storage house, especially when a diseased potato comes in direct contact with a healthy one, but in Maryland little spread of the disease in storage has been observed. The parasite which causes the blackrot disease may live over in the soil for a year or more and it is therefore very important to avoid infecting the soil, both in the seedbed and in the field by bedding infected potatoes and thereby producing diseased plants to be set in the field.

Scurf is a sweet potato disease which produces dark blotches on the skin. Sometimes these blotches are so numerous that the entire skin is black. Aside from shriveling which often results from severe infection, the quality of the flesh is not affected. However, the salability of the roots is severely affected by scurf. Most foods are bought upon appearance and the consumer of sweet potatoes prefers those free from scurf and other diseases and is willing to pay more for them. Scurf lives over from year to year in the seed and soil similar to blackrot. The following questions and answers will give an idea of sweet potato certification in Maryland.

1. What is certified seed?

Certified seed is seed which meets certain standards set up by the Maryland Seed Certification Board and which has been tagged and sealed by the Maryland Seed Certification Board.

2. Can sweet potato growers certify their sprouts?

Sweet potato roots and sprouts may be certified in Maryland.

3. What are the standards for certified sweet potatoes seed and sprouts in Maryland?

Not more than one per cent of the plants in the field must be infected with stemrot.

Not more than one-half of one per cent of either blackrot or scurf must be present in the roots after they are stored. Not more than one per cent of the sprouts must be infected with blackrot or scurf. Seed and sprouts may be disqualified at any time for any other disease, insect or condition, which, in the judgment of the inspector, may be of sufficient importance to disqualify them. Certified sweet potatoes shall be graded, according to the recommendations of the U. S. Department of Agriculture, into U. S. Grade No. 1 or U. S. Grade No. 2. All certified sweet potato seed and sprouts must be true to type and reasonably free from mixtures. Sweet potatoes shall be named by group or variety name recommended by the U. S. Bureau of Plant Industry.

4. How many inspections must be made to certify sweet potatoes? For seed the following inspections are required.

1. When the vines begin to run.
2. At or just before digging time.
3. After curing.
4. Just preceding shipment.

For sprouts:

1. When the vines begin to run.
2. At or just before digging time.
3. At bedding time.
4. Just preceding shipment.

Only the last two inspections are necessary for sprout certification when certified seed from another state is used, provided such seed meets the approval of the Seed Certification Board.

5. Are there any charges for certification?

No charges will be made for the first inspection. However, if further inspections are desired a fee of $1.00 per acre, or fraction thereof, will be charged. An additional fee of five cents for seal and tags included will be charged.

6. Do these charges cover the expense of making the inspections?

These charges do not cover the cost of inspection excepting where large acreages are grown. The inspection expense not covered by the fee is borne by the state.

7. Does it pay a grower with a large acreage of seed or a large number of sprouts to have them certified?

Yes, it pays such a grower very well to have his seed or sprouts certified. If he intends to use the seed or sprouts himself he cannot afford to risk planting his field from sprouts which do not meet the certification standards. If he intends to sell them he will find that they sell easier when tagged with a state certified tag, and furthermore, he cannot risk selling seed or sprouts which do not meet certification requirements if he cares for any future orders.

8. Does it pay a grower of a small acreage of seed or a small number of sprouts to have them certified? Yes, it pays the small grower also because he cannot afford to plant his field from sprouts which do not meet the requirements for certification.

9. What should a grower do if he wishes to have his seed or sprouts certified?

He should write immediately to his county agent or to the Maryland Seed Certification Board, University of Maryland, College Park, Md., for an application for certification of sweet potatoes. As soon as he receives this he should fill it out and send it to his county agent or to the Maryland Seed Certification Board.

REGULATORY WORK OF THE DEPARTMENT OF AGRICULTURE AFFECTING FRUITS AND VEGETABLES

H. A. SPILLMAN,
U. S. Department of Agriculture

The Division of Fruits and Vegetables of the Bureau of Agricultural Economics is charged with the administration of four Acts which are of concern to growers of fruits and vegetables. These laws are the Standard Container Act of 1916, Standard Container Act of 1928, the Produce Agency Act, and the Perishable Agricultural Commodities Act.

The Standard Container Act of 1916 is an interstate commerce law which prescribes standard capacities and dimensions for Climax baskets and standard capacities for berry boxes and till baskets. By Climax baskets I mean the oblong baskets with oval ends and wooden bottoms, with a handle in the center, and which are commonly known as grape baskets. By Till baskets I mean baskets of the type such as are used in six-basket crates.

The standard sizes of Climax baskets are two quart, four quart and twelve quart. Till baskets must be of the capacity of one dry quart or multiples thereof. The sizes commonly made are the one, two, three and four quart, although California sometimes uses a six quart size. The one and two quart sizes of Till baskets are ordinarily used by retailers as display packages. The three quart size used to be used in Tennessee, Mississippi, Texas and some other Mississippi Valley sections as a tomato package, four them being packed in a flat crate. The four quart Till is the one commonly used in the six-basket crate so popular for tomatoes and peaches.

Berry boxes may be of three sizes, half pint, pint and quart, dry measure. There is no specification as to dimensions of berry boxes, and they may be of any shape or size. As a matter of fact, several different types of berry boxes are still in use in this country, although what is known as the American type, which is the one commonly in use in Maryland, is by far the most popular. It may be interesting to you to learn that the pint size of berry box seeems to be rapidly replacing the quart size as the popular package for the marketing of strawberries.

The Standard Container Act of 1928 establishes standard capacity for hampers, round stave baskets, and splint or market baskets. It differs from the Standard Container Act of 1916 in that it is a weights and measures law and not an interstate commerce law. By this I mean that it was enacted under the authority of that provision of the Constitution which gives Congress the power to establish standards of weights and measures. Such a law is not limited in its scope to interstate commerce, but affects all transactions in which the containers in question are used, no matter whether the transaction is intrastate or interstate in character.

The standard capacities established for hampers and round stave baskets are one-eighth, one-fourth, one-half, five-eighths, three-fourths, one, one and one-fourth, one and one-half, and two bushel; for splint or market baskets, the standard capacities are four, eight, twelve, sixteen, twenty-four and thirty-two quart. No standard dimensions are established by law, but the law does require that manufacturers submit the specifications for their baskets to the Department of Agriculture for approval. The Secretary is required to approve such dimensions if they will make a basket of standard capacity, and one which is not deceptive in appearance. The law contains no provision requiring the marking of containers, but in the regulations we have provided a method of marking which may be used by a manufacturer whose specifications have been approved by the Department. Each manufacturer whose specifications have been approved is assigned a number, and if you see

728
a mark on a basket which reads like this, U. S., you will
1 Bu.
know that the factory which made the basket is No. 728 on our records and that we have approved the specifications for its basket as being correct for a basket of one bushel capacity.

The law provides that illegal baskets may be seized under of process of libel and if the Court so orders, may be destroyed. The law further provides that those who purchase baskets shall not be prosecuted if the baskets are of improper size, provided they can produce a guaranty from the person from whom they bought the baskets to the effect that they are of proper size. I wish to urge that in purchasing baskets you insist that the manufacturer or jobber give you such a guaranty. You will thereby protect yourself and assist us greatly in the administration of the Act. It is the desire of the Department not to bother growers about matters of this sort. We wish to work with the manufacturers so as to insure a grower securing baskets of proper capacity. However, we do ask for the cooperation of the growers in securing adherence to the provisions of this law.

The Produce Agency Act was passed in March, 1927, and became effective July 1, 1927. This Act relates to agency transactions involving the receipt in interstate commerce of perishable farm products of any kind or character. This has been held to include butter, eggs, dressed poultry, cut flowers, as well as fruits and vegetables. The law prohibits dumping without good and sufficient cause; the making, with fraudulent intent, of false reports or statements; and failure truly and correctly to account. In the course of the last three years and a half, we have investigated something over eight hundred cases and obtained settlements in many, and in others have referred the cases to the Department of Justice for prosecution. Such prosecutions with successful results have been had in more than a dozen cases.

This Act has undoubtedly accomplished a great deal of good, but the fact that it was limited to agency transactions prevented our taking any action in many abuses which arise in connection with purchase and sale transactions. This condition of affairs has now been corrected by the enactment in 1930 of what is known as the Perishable Agricultural Commodities Act which was signed by the President on June 10, 1930. This Act is a licensing Act and provides that every commission merchant, broker or dealer engaged in the handling of fresh fruits or fresh vegetables in interstate commerce shall secure a license from the Federal Department of Agriculture.

The question then arises, "What is a commission merchant, a dealer, and a broker?" This can best be answered by quoting the definitions given in the regulations:

> *Commission Merchant.* This term means any person engaged in the business of receiving in interstate or foreign commerce any perishable agricultural commodity for sale, on commission, or for or on behalf of another.
>
> *Dealer.* This term means any person engaged in the business of buying or selling in carloads any produce in interstate or foreign commerce; except that no producer shall be required to obtain a license as a dealer if selling only produce of his own raising. A person buying any produce solely for sale at retail shall not be considered a dealer until his purchases of such produce in any one calendar year are in excess of 20 carloads. Producers selling only produce of their own raising and persons buying produce solely for sale at retail whose purchases of such produce do not exceed 20 carloads in any calendar year may elect to secure a license and in such case shall be considered as dealers.

Broker. This term means any person engaged in the business of negotiating sales and purchases of any perishable agricultural commodity in interstate or foreign commerce for or on behalf of the vendor or the purchaser, respectively.

Please note that a grower who sells only produce of his own raising is not required to obtain a license. If he buys as much as a carload from other parties, he must secure a license. A grower may obtain a license if he desires, and when he has been licensed he is liable under the Act with respect to the produce of his own raising just as is any other dealer.

There has been much misunderstanding of the twenty carload exemption. Many people think that this applies to all parties. It does not; it applies only to retailers. A dealer is required to be licensed if he handles as much as one carload in interstate commerce in one year. There is no limit on the amount a commission merchant or broker must handle in order to come under the Act. Furthermore, the law directs the Secretary of Agriculture to define the term "carload," and he has done so in the following words:

"This term means such quantities of produce as are shipped or received by freight or express in cars on which transportation charges have been assessed at a straight and/or mixed carload rate, and/or the aggregate of such quantities of produce as are shipped or received by a dealer by freight, express, truck, boat, or otherwise, in lots of not less than one-fourth of a carload in any calendar year as determined by the tariff minimum weight for any such commodity as prescribed by any railway tariff on interstate shipments reduced to such minimum carloads."

The law makes it unlawful for a commission merchant or broker to make any fraudulent charge, for a dealer to reject or fail to deliver within the terms of the contract without reasonable cause, for a commission merchant to dump without reasonable cause; for a commission merchant, dealer, or broker to make, for a fraudulent purpose, any false or misleading statement or to fail or refuse truly and correctly to account promptly in connection with any transaction; for any licensee to represent in any way that any commodity received in interstate or foreign commerce was produced in a state or country other than that in which it was produced, and for any licensee to remove, alter, or tamper with any mark or notice placed on any container or car containing any perishable agricultural commodity if such mark or notice contains a Federal or State certificate as to the grade or quality of the commodity. For violation of the act, the licensee may be punished by having the facts published, by suspension of license, or by both publication and suspension, or for flagrant and repeated violation by revocation of his license.

Any one who has been notified of the rejection of a car can secure action by the Department of Agriculture by wiring the facts to the Department. If car is not standing on track, complaint may be made by mail and an investigation will be made in due course. The party complaining may either file a complaint asking for damages and the issuance of a reparation order or a complaint of violation of the Act. The former type of complaint will result in what is nothing more than a private law suit before an examiner designated by the Secretary of Agriculture. A complaint of the violation of the Act is handled by the Department of Agriculture without expense to the party complaining. It is the desire of the Department to make this Act the greatest possible service to every one affected by it, and it is hoped that those who feel that they have suffered by a violation of the Act will feel free to bring the matter to our attention.

COMPETITION IN THE VEGETABLE INDUSTRY

By RALPH RUSSELL,
University of Maryland

It seems good to be among Farm Bureau members again, for Farm Bureau meetings have a homelike and friendly atmosphere that I have always enjoyed. Having had contacts with the Farm Bureaus of New Hampshire, New York, Massachusetts and Wisconsin, I am glad to be making the acquaintance of the members of the aggressive Farm Bureau of still another state.

I have been asked to speak on a rather technical subject, but it is one having practical sides with which you are all familiar. Much of what I shall say is doubtless an old story to you, but the point of view may be new.

This group represents, I am told, both market gardeners and growers of truck crops. You have some of the same problems in common, but the interests of the two types of business differ in some particulars. While something of what I say will apply to matters affecting all of you, I have had the market gardeners particularly in mind.

Vegetable crops compose two per cent of the crop acreage of the United States and constitute nine per cent of the value of all crops. These two facts give us a picture of an industry relatively unimportant in crop acreage, but with products far above the average crop in value per acre. This picture is essential to the discussion.

That some people are specializing in vegetable growing is due to the extensive division of labor under which our civilization operates. Instead of allowing each person to depend on what meager supplies he could obtain for himself, civilization has built up a system whereby each person performs specialized work and draws on others for those things which he can use but has not produced himself. By this concentration on a few activities the efficiency of the individual is increased and a greater supply of goods is available to the whole community than if each produced for himself. Thus a high standard of living is possible for a population relatively numerous in comparison with that of an earlier period.

In the early days of white settlements in this region a comparatively scant population of pioneers lived rigorous lives. Beside maintaining agriculture, they took advantage of natural resources by hunting and fishing and other pursuits and so provided themselves with clothing, food, and other necessities. Of manufacturing, as we know it today, they had little. Each family made its own cloth, obtained practically all its own food, and performed hundreds of tasks necessary to its life. The efficiency and ability of these families varied, and some which had ability along certain lines were ineffectual in others.

Gradually certain individuals narrowed the field of their activities, producing a greater amount of certain things and exchanging their surplus for products they did not have time to make themselves. Through this process some people became manufacturers, others farmers or fishermen or laborers. Within each occupation specialization grew up and some farmers became vegetable growers, others dairymen, and so on, though many general farmers remained.

A greater total product resulted from this specialization, since it allowed men to perform the tasks at which they were most able to the exclusion of other duties. Moreover, there was a gain in production resulting from the fact that besides selecting the more efficient producers, the narrowing of their activities brought about by specialization increased the efficiency of those selected producers still more.

The result of specialization combined with other factors in progress has been that this region now supports a more numerous population than in pioneer days. The present-day inhabitants have control over such material goods as comfortable clothes, autos, radios, telephones, and other things of which the pioneer did not dream. I am speaking of material welfare only. I do not claim that the present inhabitants are happier than their predecessors, merely that they are less subject to the whim of the elements for their physical comfort and convenience, and that they have command over more material goods.

The principle involved in specialization, often called the principle of comparative advantage, may be expressed as follows: each area or person tends to produce a few things only, selling the surplus, and with the proceeds buying other things needed. More technically, all persons, producing units, and places tend to devote themselves to producing those products in which their advantage over others is the greatest or their disadvantages least.

Specialists may vary in the intensity of their specialization. Some vegetable growers may be in other businesses beside their farming enterprises. Some may specialize in the growing of a single crop, while others may grow every crop for which there is an outlet in their market. Here, of course, is one difference between the grower of truck crops and the market gardener, the latter usually produces in greater variety. Some growers may carry their products directly to the consumer, while others place them in distributing channels far removed from the ultimate purchaser.

Specialization in agriculture is quite largely determined by the physical factors of climate, soil and topography. The abundance of similar areas is likewise important. The density of the population, the supply of labor and of capital, the customs of the people and transportation facilities all help to determine the nature of specialization. The factors are usually so numerous that it is difficult to completely analyze them, but the more important ones may usually be segregated for study. Shifts in producing areas sometimes occur, although the reasons are obscure. Unnoticed changes (in concealed factors) may be responsible.

A shift of freight rates may change the relations of advantage and disadvantage between two producing regions. A decrease in freight rates from California is said to have given that state a greater advantage over Florida in putting citrus fruit on many markets the last few years.

Let us look at some of the changes in the vegetable industry in the light of comparative advantages. Until about 1890, cities drew their supplies of perishables from nearby. The development of ice plants and the use of refrigerator cars put the whole South within reach of Northern markets, greatly lessening the comparative advantages under which local producers about the great cities had labored and decreasing the disadvantages facing more distant regions.

The improvement in transportation recast the whole fabric of the industry. Unlimited cheap land and unlimited cheap labor was made available, where before relatively high priced land and labor in the vicinity of cities was all that was usable in the business. Location became of vastly less importance and the whole coastal plain from Long

Island to Mexico was available for the production of certain vegetable crops.

The new industry that rose from this relocation has been but forty years in the making and has by no means settled down to a permanent basis. While it is unlikely that any such remaking of the map of vegetable production will take place in the next forty years as that which took place in the last forty years, vast experiments and changes are still in process. It is unlikely that the vegetable business will ever become absolutely fixed in area and location. Minor changes in the underlying structure must occur. Every change that disturbs the status quo of comparative advantages will result in changes in location, acreage, and intensity as well as in degree of specialization.

When they first became common, long distance shipments did not compete with the products of local growers to any marked extent. They were usually much earlier than the home-grown product, and the seasons did not overlap. Where there was overlapping the last products of the earlier region did not compare favorably with the first fruits of local production and so were readily forced off the market. The long distance shipments were high in price, usually in the luxury class, and so could not take the place of the low priced local product in the market.

Now, however, the local season has been considerably shortened by the competition of other producing areas. Rather than raise a number of varieties of a given crop so as to extend his season as long as possible, the local grower often has to confine his efforts to one or two varieties maturing when the local regions have the finest product and the greatest advantage over other producing regions. With products shipped from both north and south of him, better products may be put on his market from elsewhere, except during his own season of best production. First pickings crowd out last pickings in any market. Buyers and pickers move on to new regions often leaving unmarketed the crop that was not picked during the height of its season. Distance means little nowadays with the possibility of coast to coast hauls of many products.

In the light of all these changes in the areas of production, with many of our vegetable outlets thrown open to the entire country, why does the local producer survive? He must have many advantages on his side and these advantages must be capitalized to enable him to hold his position.

In the first place there is the evident advantage in transportation costs. He hasn't the costly freight to pay in any such degree as the long distance shipper. Bunched vegetables from Texas bear a freight rate to the Atlantic coast markets of $33 per ton, with an icing charge of $105 per car additional. Celery from Michigan pays a freight of half a cent a bunch to reach eastern markets. In contrast, the local grower may make a market trip in three hours with a light truck, saving most of these expenses.

The high cost of shipped-in produce reacts favorably on the local market. The buyer, accustomed through the rest of the year to pay a high price for out-of-season shipped-in produce, is not inclined to beat the local producer down to quite as low a price level as he would otherwise. The consumer has become educated to a higher price.

It may even happen that the low point of prices for some products has passed before local production has begun to enter the markets. Thus in recent years, strawberries in the vicinity of Washington have reached their lowest price and started on the up-grade before local production reaches its peak, which, needless to say, is to the advantage of the local grower.

If the distant shipper got nothing for his crop, the freight, packing, and selling costs would make the product quite expensive at its destination. The local producer has the advantage of having done away with most of these costs. Packaging costs of the local grower are less. He often receives empties in exchange for the packages he brings in full of produce. The long distance shipper, on the other hand, must supply a gift package in most sales. With cabbage crates for a carload running to $75, bushel baskets for a car of carrots costing nearly $100, much has been added to the shipper's expenses. Distant shipments pass through many hands. They create bad impressions at every sale unless more expensive packages are used than those the nearby grower uses without prejudice.

Another advantage of the local grower is in regard to market risks. When the distant shipper starts a car to market, he cannot know what prices will prevail when it arrives. Either he or someone else must take the risk of market declines and gluts. If he shifts the risk by selling to a shipper, that risk is reflected in lower prices. He averages to incur selling or handling expenses greater than those of the nearby producer, though these costs could be reduced by organization and better financing.

The long distance shipper of fruits and vegetables incurs greater risk of loss from disease, insects and bad weather. Where a grower is specializing in one, two or three crops, a single frost, hail, or drought may burden him with staggering losses. The market gardener ordinarily has his risks more diversified. The long distance shipper is often in a comparatively new district and the hazards of climate, diseases and pests are less predictable. In new regions pest control offers new problems and new pests may be present, with consequent greater danger of losses. Sometimes, however, new regions are free from the pests of older producing regions.

With the same amount of crop damage from weather, insects or disease, the distant grower must lose more heavily, for overripeness or poor carrying quality ruins his crops for market. Crops which have suffered injuries which might ruin them for markets several days distant may be salvaged if the grower is within truck haul of his market. If weather conditions make it necessary, the nearby grower can often leave his crop in the field a few days longer and still get it to the market in good condition. If a pest is making inroads, he can crowd the season a little in a way impossible to the long distance shipper. Damaged produce can stand the expense of short shipment, but often can not be marketed by the grower far from his markets.

The nearby grower, moreover, suffers less loss from culling. He can afford to market sizes and grades that his distant competitor can not dispose of. The marketing of the lower grade products adds to his income per acre. We see very few defects in the northwestern apples that reach our markets, while Virginia growers can dispose of cull fruit that could never be started in the transcontinental journey. Florida shippers of green-wrapped tomatoes must cull out all pink fruits and they are a total loss, but the nearby grower, supplying the Baltimore market, can dispose of all his crop at some price, providing it be reasonably sound. The producer for the home market comes much nearer to selling all that he grows than the long distance shipper.

At the time that nearby producers are putting their vegetables on the market, their quality is superior to anything that can be shippd in, and so they hold their markets. A home-grown perishable has never been entirely crowded off the market in its own season by a superior distant product. The largest and hardest lettuce is produced in the Imperial Valley of California during the winter. No head lettuce grown near eastern markets compares with it. But the Imperial Valley can not produce at a time of year to compete with any home-grown lettuce produced north of Charleston, South Carolina. If any regions are to be successful competitors of the eastern local producers, it will be the high altitude regions of the Rocky Mountain states where low summer temperatures prevail. These regions are more or less new and experimental, like the grapefruit sections laid out by real estate operators in the Rio Grande Valley.

Home-grown products are not only fresher, as a rule, but are at a better stage of maturity. Radishes, peas, green beans, sweet corn, tomatoes, bunched vegetables and most small fruits usually displace distant products in favor of the local supply during their season. They either excel in quality or are produced so cheaply as to defy competition.

Local eastern sweet corn, peas, limas, tomatoes and radishes are superior to those from distant points. The local varieties can be grown and picked on a basis of quality rather than for resistance to shipping hardships. Distant products must be those that will "stand up" regardless of quality. In this regard it may be said that roadside markets are giving some consumers their first acquaintance with native products at their best.

The local grower has the advantage of being able to change his marketing tactics in seasons of oversupply so as to reduce his selling costs; the distant shipper can not greatly alter his methods of marketing.

To summarize, the producer located near large eastern markets has fundamental advantages which tend to help him stay in the business. Certain elements of costs are in his favor and certain economies are possible to him. Special demands and special products may be handled by the man whose market is at his door.

From these conclusions we infer that in hard times the local producer will fare best. Consumers resort to canned goods out of season and let the high-priced shipped-in produce alone. Moreover, home-grown products when in season and cheap, will be relied on to a greater extent than ordinarily for family living.

Another factor in changing markets for local vegetables is the chain store development. Two solutions have been suggested for the problem that they present. If the vegetable grower is to meet their demand for a large quantity (of goods of like quality), available over a considerable period, it would seem as though our producers would be compelled to combine. The alternative is not to deal with the chains, and there is one field which these stores cannot touch that lies open to the vegetable grower. The chain store business depends on quantity sales of standardized products. This means that they cannot standardize at the highest quality for there is not sufficient produce of that grade. The small producer might aim to supply the narrower market for goods of the very highest grade that the chain store seems to be unable to reach.

In the light of this knowledge of specialization and comparative advantages, what seems to be going on in the vegetable industry in Maryland? Are the advantages of local growers in this region increasing or decreasing? I have examined a good deal of statistical material without seeing anything of great significance. It might be well, however, to give you the results I obtained in plotting the trend indicated by some statistics of certain vegetable crops for recent years.

Maryland has long been a leader in the production of canned tomatoes. For the years 1921 to 1929 inclusive, the percentage of the United States tomato pack furnished by Maryland has averaged 29.6 per cent. The trend during that time has been distinctly downward, however, indicating a decline of nearly one-third, from 36.8 per cent down to 22.4. Acreage figures for the thirteen years, 1918 through 1930, tell the same story. Though the absolute decline in acreage over that period clearly is evident, the relative drop is still more marked. The trend line drops from over 21 per cent of the United States acreage of canning tomatoes to less than 10 per cent. This is in line with our knowledge that the tomato canning industry has spread westward and southward to remoter producing regions in recent years and has declined in regions formerly of greater concentration.

Maryland's percentage of the acreage of market tomatoes of the intermediate crop has increased slightly in the last thirteen years, rising from below twelve per cent to nearly seventeen per cent.

The westward movement of sweet corn canning is graphically indicated by a decline in Maryland's percentage of the total pack and total acreage of canning corn as shown by the trend line for recent years.

Though the trend in Maryland's percentage of the total acreage of canning peas has been downward recently, the actual acreage has been increasing somewhat. Market peas are showing an increased acreage over the last five years.

Over the past thirteen years the trend of Maryland's percentage of the total acreage of snap beans for canning has been upward, rising from seven and a half to over eleven per cent. In the production of market snap beans, however, though the acreage has increased, Maryland's competition from other states producing the intermediate crop has increased.

Maryland's acreage of canning spinach has declined in recent years, California having taken the bulk of the canning business in this crop. The market spinach acreage has held its own over the past ten years, but the percentage that this acreage was of that of competing states has declined from nearly nine to less than four.

In asparagus acreage, Maryland has been growing rapidly, from 480 acres in 1918 to 2,150 in 1930. The trend line rises in that time from four per cent of the acreage of competing states to more than ten per cent.

While there has been no very marked decline in the Maryland acreage of market cabbage, her importance among states competing in the production of the intermediate crop has declined in thirteen years from over eleven per cent of the acreage to seven per cent.

Though in the past nine years acreage of second early potatoes in Maryland has shown no marked tendency to decline until very recently, the trend of Maryland's percentage of acreage among competing states is downward.

Among the states competing in the intermediate crop of cantaloupes, Maryland has risen in thirteen years very slightly in the percentage of the total acreage, while expanding the absolute acreage considerably.

Watermelon acreage in Maryland has declined and Maryland's position among the late watermelon states has declined markedly since 1918.

Maryland cucumber acreage has been increasing in recent years. The acreage of market cucumbers has averaged to be about one-fourth the total of the intermediate states, and the trend is toward a dominant position in this group.

In the last eleven years Maryland strawberry acreage has evinced a slight upward trend. Her position among the states whose crop matures at about the same time shows some decline, from 22 per cent of the total acreage down to 20 per cent.

Maryland vegetable production seems to have increased in volume over the last decade. With respect to many vegetable crops, however, the importance of Maryland production relative to the total has declined. In the production of a few crops her relative importance has increased.

Mr. A. M. Todd for the nominating committee presented the following names as officers of the Association for the year 1931 and these were unanimously elected:

President—W. N. EYLER.
Vice-President—STEVE MERRITT, JR.
Secretary-Treasurer—W. R. BALLARD.
Members Executive Board—A. M. TODD, R. T. MERRITT, R. PHELPS.
Director for Maryland Agricultural Society and Maryland Farm Bureau Federation—B. I. SPARKS.
Delegate to Annual Meetings—W. R. BALLARD.
Director to Agricultural Corporation—J. W. DAVIS.

The auditing committee examined the Treasurer's books and reported them in order with a balance in hand, December 31st, 1930, of $13.05.

L. M. GOODWIN,
F. R. TODD,
Committee.

The report was adopted.

The following resolution, presented by the resolutions committee, was adopted:

Whereas, the depredations of thieves in the rural districts of the State have become so common as to be unbearable.

Resolved that we, the Maryland Vegetable Growers' Association, endorse the bill sponsored by the Farm Bureau Federation to give police protection to these rural districts.

Potato Exhibit

In cooperation with the Maryland Certification Board, the Association made a start toward developing an annual exhibit of certified potato seed stock. This display was held in connection with the Annual Meetings.

The exhibit was small on account of the unfavorable season and the late date at which the show was announced. However, the following awards were made:

Irish Cobblers

First—W. A. WARD, Pocomoke, Md.
Second—CLAY PILCHARD, Pocomoke, Md.
Third—HERBERT PILCHARD, Pocomoke, Md.

Sweet Potatoes

First—WM. P. HUTTON, Salisbury, Md.
Second—FRANK HUTTON, Salisbury, Md.
Third—CECIL HUTTON, Salisbury, Md.

It is hoped that this may become an important feature of the annual meetings.

REPORT

of the

SECOND ANNUAL MEETING

Maryland Stockmen's Association

January 7 and 8, 1931

BALTIMORE, MARYLAND

The first session of the Second Annual Meeting of the Maryland Stockmen's Association was called to order in the Lord Baltimore Hotel, Baltimore, Maryland, Wednesday forenoon, January 7, 1931, with the President, W. R. Harvey, of Baltimore County, in the chair.

PRESIDENT'S ADDRESS

BY W. R. HARVEY, *Corbett, Md.*

Members of the Maryland Stockmen's Association:

Another year has rolled around, and in the year 1930, just passed, we farmers and stockmen have had many difficulties to confront and contend with. We have been afraid that prevailing conditions, in some way, would affect the attendance of these meetings, but I am in hopes that the attendance will be about as good as usual and I am sure that those of us who are present will be well repaid for coming by hearing some of the addresses that will be made here this morning by probably the best list of speakers that we have ever had on our program.

Those responsible for getting up the program have asked me to say something about the Baltimore Livestock Show. I might take it for granted that most everyone present knows all about the show, but as there may be some of our members who have not been able to attend either of the shows, I will try to give a pretty good outline of just how it came about and of what has been done.

After several meetings of a few of those of us who were interested in livestock breeding and feeding in Maryland and in line with a survey of Maryland's resources undertaken by the Association of Commerce, with co-operation of the State government, a meeting of the following persons was called for November 26, 1928, to be held at the office of the State Board of Agriculture:

S. M. Shoemaker, President, State Board of Agriculture, Baltimore.

C. C. Gelder, Member, State Board of Agriculture, Princess Anne.

J. B. George, Director, Live Stock Sanitary Service, Baltimore.

J. H. Baugher, President of Union Stock Yards Company, Baltimore.

Jos. P. Healy, Swift & Co., Baltimore.

Joseph Kurdle, President of Baltimore Meat Packers' Association, Baltimore.

Wm. F. Schluderberg, President of Wm. Schluderberg-T. J. Kurdle Co., Baltimore.

Humphrey D. Wolfe, Ex-President of Maryland Sheep Growers' Association, Glenwood.

J. W. Jones, Maryland Farm Bureau, Olney.

Lloyd Balderston, Producer, Colora.

Ernest Shriver, Producer, Emmitsburg.

Walter Peppler, Manager of Beef Department, Corkran Hill Co.

Frank H. Driver, Commission Merchant Union Stock Yards, Baltimore.

W. S. Chichester, Producer, Aquasco.

Wilbur Barrow, Producer, Bel Air.

P. G. Stromberg, Publisher, Ellicott City.

O. K. Quivey, Baltimore & Ohio R. R., Baltimore.

Russell G. East, Pennsylvania R. R., Shelbysville, Ind.

F. B. Bomberger, University of Maryland, College Park, Md.

K. A. Clark, University of Maryland, College Park.

W. R. Harvey, Maryland Stockmen's Association, Corbett.

Mr. J. H. Baugher, President of the Union Stock Yards Company, was made chairman of this committee. After considerable discussion it was decided to name a sub-committee, and this committee was accepted by the Association of Commerce as its Livestock Committee. This committee was made up of the following persons:

J. H. Baugher, Chairman, Union Stock Yards Company.
K. A. Clark, University of Maryland.
F. B. Bomberger, University of Maryland.
J. W. Jones, Farm Bureau Federation.
O. K. Quivey, Baltimore & Ohio R. R.
Russell G. East, Pennsylvania R. R.
Frank H. Driver, Commission Merchant.
Walter B. Peppler, Manager of Beef Department, Corkran Hill Co.
Joseph Kurdle, Wm. Schluderberg-T. J. Kurdle Co.
Joseph P. Healy, Swift & Company.
W. R. Harvey, Maryland Stockmen's Association.
Lloyd G. Corkran, President of Corkran Hill Co.
William F. Schulderberg, Buyer for the Wm. Schluderberg-T. J. Kurdle Co.
Robert L. Showacre, General Manager of the Union Stock Yards.

This committee, as named at that time, constitutes the present Executive Committee of the Baltimore Livestock Show.

After some discussion at the several meetings held by this committee it was decided to hold the first show during the month of October, 1929. The thought in the mind of the committee, first, was to have a show and sale of feeder cattle, so that the Maryland feeders might see just what kind of cattle they could feed profitably and be able to buy them right here at home at prevailing market prices. Later, it was decided to add two classes for fat cattle, also classes for baby beef steers exhibited by Boys' Club members. It was decided to hold the show October 22, 23 and 24. After considerable effort on the part of all connected with the venture, the show, I believe, was considered a success. We had on exhibition 1,997 head of cattle in the car lot division and 59 head of baby beef steers entered by Boys' Calf Club members from Maryland and Virginia. These cattle were sold at auction on Thursday, beginning at 9:15 A. M., and by 4:30 P. M. the total cattle sales amounted to $240,203.42.

The grand champion carload of cattle exhibited by Dan D. Casement and purchased by "Buck" Schluderberg for the Schluderberg-Kurdle Company, brought the record price of $50.00 per cwt. The grand champion individual steer sold for $1.07 per pound, and was also purchased by Mr. Schluderberg.

The following summary will give a good idea of just how all the cattle sold:

ANALYSIS OF OCTOBER 24TH, 1929, SALE RESULTS

Fat Cattle	Per Cwt.
The grand champion carload of fat cattle sold for	$ 50.00
The reserve champion carload of fat cattle sold for	32.00
The grand champion individual steer sold for	107.00
The reserve champion individual steer sold for	35.00
The average price of the five highest selling carloads of fat cattle was	25.86
The highest selling ten carloads averaged	20.19
The highest selling twenty carloads averaged	16.85
Feeder Cattle	
The average price of the 775 head of feeders was	12.48
The Angus feeders in all classes averaged	13.70
The Hereford feeders, all classes averaged	12.80
The Shorthorn feeders, all classes averaged	10.93
Boys' Club Steers	
The 59 head of Boys' Club baby beef steers averaged	23.67
The Angus baby beef steers averaged	34.09
The Hereford baby beef steers averaged	19.98
The Shorthorn baby beef steers averaged	16.95

THE 1930 SHOW AND SALE

The Second Annual Show was held October 14, 15, 16 and 17, 1930. At this show we added classes for half-carlots of fat cattle and for fat hogs and lambs. This show, both in point of number and quality of the exhibit, was a great improvement over the first show. We had 2,060 head of cattle on exhibition, coming from the states of Maryland, Virginia, West Virginia, Ohio, Pennsylvania, New York, North Carolina, Indiana, Illinois, Iowa, Minnesota, Kansas, and Texas. These cattle were sold on Thursday of show week with results as given in the following summary:

TOTAL SALES OF LIVESTOCK SOLD AT THE 1930 SHOW HELD IN BALTIMORE, OCTOBER 14-17

Carloads of steers weighing over 1,100 lbs. sold for	$ 94,710.78
Half-carloads of steers weighing over 1,100 lbs. sold for	14,959.57
Carloads of steers weighing under 1,100 lbs. sold for	31,332.70
Half-carloads of steers weighing under 1,100 lbs. sold for	21,460.10
Individual steers, open class	9,361.76
Boys' Club steers	15,912.03
Feeder cattle	23,476.56
Total cattle sales	$211,213.50
Lambs in show sold for	2,668.10
Hogs in show sold for	3,345.65
Total sales all livestock	**$217,227.25**

ANALYSIS OF THE 1930 BALTIMORE LIVESTOCK SHOW SALE RESULTS

	Per Cwt.
The grand champion carload of fat cattle sold for	$ 21.50
The reserve champion carload of fat cattle sold for	16.00
The grand champion half-carload of fat cattle sold for	15.50
The reserve champion half-carload of fat cattle sold for	15.00
The grand champion individual steer sold for	225.00
The grand champion Boys' Club steer sold for	50.00
The five highest selling carloads of cattle sold at an average of	17.25
The ten highest selling carloads of cattle sold at an average of	16.31
The twenty highest selling carloads of cattle sold at an average of	14.81
The five highest selling half-carloads of cattle sold at an average of	14.96
The ten highest selling half-carloads of cattle sold at an average of	13.47
The twenty highest selling half-carloads of cattle sold at an average of	13.20
The five high individual steers, including the grand champion	68.90
The five high individual steers, excluding the grand champion	27.60
The ten high individual steers, including the grand champion	51.70
The ten high individual steers, excluding the grand champion	21.05
The twenty high individual steers, including the grand champion	30.31
The twenty high individual steers, excluding the grand champion	16.72
The five high Boys' Club steers	18.80
The ten high Boys' Club steers	17.47
The twenty high Boys' Club steers	15.89
Feeder Cattle	
Five highest selling carload of feeder calves averaged	10.76
Ten highest selling carload of feeder calves averaged	10.20
Five highest selling carload of heavy feeders averaged	9.05
Ten highest selling carload of heavy feeders averaged	8.64
Hogs	
Two carloads sold at an average of	11.65
Seven pens of five sold at an average of	11.43
Highest selling individual barrow sold for	14.00
Lambs	
Five carloads sold at an average of	9.65
Four pens of 15 sold at an average of	13.55
The grand champion individual lamb sold for	150.00
Four individual lambs averaged	49.00

Just a few words about the feeder cattle exhibit and sale at both of the shows. At the 1929 show we had 775 head of feeder cattle; of these 375 head were choice Hereford calves weighing under 550 pounds, 175 Angus of the same weight, and 50 were Shorthorns. The remaining 175 head were cattle of heavier weight and of all three breeds. In 1930 we had 665 head of feeder cattle; 167 were Hereford calves, 100 were Angus calves, and the balance were cattle of all three breeds of heavier weight. These cattle were sold very largely to Maryland farmers and feeders to be grazed and fed for the Baltimore market. In the two years we sold and placed on Maryland farms 1,440 head of cattle at prices exactly what they were worth on the open market, without any additional cost whatever, and the buyers had a chance to see just what they were buying, all of which we think is quite an advantage and improvement over conditions prevailing before the advent of the Baltimore Livestock Show.

The report of the Secretary-Treasurer was submitted and approved. The report follows:

REPORT OF THE SECRETARY-TREASURER

B. E. CARMICHAEL, College Park

During 1930, the second year of the existence of the Maryland Stockmen's Association, some growth and some increased activities have taken place. At the beginning of the year, three sessions of the Annual Meeting were characterized by a lively interest on the part of members and active discussions of the excellent addresses delivered by speakers of ability. A copy of the published Annual Report has gone to all members of the Association, and the details of the January, 1930, meeting will not be reviewed at this time.

Two Purebred Ram Sales were held during the year, at which 58 rams were sold at auction; one of the sales was held at La Plata, the other at Centerville. Sheepmen have shown a fine interest in the Annual Ram Sales for some years, and it is hoped that there may be a continuation and even a finer support than in the past. A complete report of these sales is on file and may be seen by any who are interested in the details of its management and financing.

The 1930 Maryland Litter Contest was, in both entries and accomplishments, better than any other of these contests. A total of 33 entries was made from 19 different counties of the State. Of the 33 entries, 13 reached the desired goal of at least 1,500 pounds at 150 days of age, and more will be heard concerning this project at the dinner meeting tonight, at which time gold prizes amounting to $375 will be presented by a representative of the Wm.

Schluderberg-T. J. Kurdle Company, who have sponsored this contest during the past two years by offering a total of $800 in cash prizes. It is believed that this contest is a meritorious project and that it should be pushed in every county of the State. The experience of participants in the Maryland Litter Contest should exert a strong influence in promoting more economical production of pork in Maryland.

The membership in the Association reached a total of 121 in 1930, more than a ten per cent increase for the year. However, the membership should be at least twice or three times as large, and there would seem to be no good reason why this cannot be brought about. In this connection, your secretary wants to express his sincere appreciation of the fine spirit of co-operation and loyalty that has characterized the attitude and expressions of Association members.

As in 1929, a Monthly News Letter has been issued throughout the year, and it is believed that this News Letter has been of value in taking to members of the Association and to the agricultural press of the State and general region news of some of the rather important events in the livestock industry of Maryland. In case the News Letter is to be continued, it is suggested that members of the Association take it upon themselves to make more frequent contributions of news items or other material for publication in it.

The financial statement covering the year's work is presented in the following summary:

1930 Receipts

January, 1930, Balance	$313.60	
1930, 116 banquet tickets	116.92	
119 membership dues	119.00	
K. A. Clark, 24½ lbs. wool from sale rams @ 26c	6.37	
Crating 3 rams for Maine shipment from Centerville Sale	7.50	
Sale balance, 2 rams sales	10.06	
1931, Membership and banquet tickets	27.00	
Total Receipts		$600.45

Expenditures

1930—		
Jan. 7	George Myers, printing banquet tickets	$ 2.00
Jan. 8	Litsinger, Inc., sign	1.50
Jan. 9	Lord Baltimore Hotel, headquarters and phone, January, 1930	4.55
Jan. 10	Baltimore Coach Co., 2 coaches to yards and return	16.00
Jan. 13	Union Stock Yards Co., banquet bill	130.00
Jan. 20	Maryland Farm Bureau Federation, medals for vocational students' awards	15.00
Jan. 28	M. Lucille Hardiman, expenses reporting meeting	2.40
Jan. 28	U. of Md. press, stationery	9.00
Feb. 3	U. of Md. press, stationery	4.50
Feb. 10	Hennegen-Bates Co., engraving and mailing cup	2.25
Feb. 18	Students' Supply Store, stencils for News Letter	6.00
Feb. 21	Students' Supply Store, paper for News Letter	6.75
Apr. 7	Students' Supply Store, paper for News Letter	6.75
May 13	K. A. Clark, auto and misc. expenses, meeting	5.54
June 16	Hyatt Mfg. Co., 9 ribbons for LaPlata Show	4.50
June 27	Addressograph Co., 42 addressing stencils	2.06
July 8	U. of Md. press, stationery	4.50
Aug. 6	Hyatt Mfg. Co., 9 ribbons, Centerville Show	4.62
Aug. 20	U. of Md. Supply Store, paper	3.00
Nov. 28	Md. Farm Bureau Federation, 1930 dues	20.00
Dec. 22	U. of Md. telegrams and telephone for arranging January, 1931, meeting	6.10
1931—		
Jan. 2	Pearson and Crain, cup for Timonium (Pen of Shropshire lambs)	15.00
Jan. 2	U. of Md. press, printing banquet tickets	1.75
Jan. 5	Students' Supply Store for papers and stencils	6.38
	Total Expenses	$280.15
	Balance	$320.30

PRESIDENT HARVEY: We are fortunate in having Professor E. S. Good, of Lexington, Kentucky, who is Chairman of the Animal Industry Group at the University of Kentucky, with us for an address this morning and another tomorrow morning. Today Professor Good will discuss the topic, "Feeding To Reduce Production Costs".

FEEDING TO REDUCE PRODUCTION COSTS

BY E. S. GOOD,

Chairman, Animal Industry Group, University of Kentucky

Mr. President and Gentlemen:

It is prophesied that we cannot look for any increase in prices of agricultural products for a few years to come, and I believe this to be the case. The price per bushel of grain, or per pound of beef, lamb, or pork may even go lower. By lowering production costs, the agriculturist will be using the methods of the manufacturers, particularly those manufacturing automobiles, who in this time of depression believe they can still maintain a good wage scale and make fair profit, though the sales and profit per car will not be as large as in the past.

In order to lower costs of production of livestock, I would emphasize two phases: first, the production of roughages, on which I will speak at this time; and second, management, of which I will speak later. In my own opinion, roughages should engage the attention of the livestock farmer more than the production of concentrates. I do not know your conditions in Maryland, but I can say that in Kentucky the supplying of roughages for livestock is one of our economic problems.

Roughages are the feeds that are necessary to carry our animals most economically through the winter. They were of great value this summer in the maintenance of livestock in the drouth-stricken states. I believe the time is coming when we will make provision for roughages to be used during that portion of the summer months when pastures are partially depleted by grazing or by drouth. A few centuries ago England, which is now one of the best livestock countries of the world, made no provision for feed for her animals during the winter months other than the pasture left after the summer grazing. If the winter was mild, a sufficient amount of pasture was on hand merely to maintain animal life. If the winter was severe or the pastures depleted many animals died. The farmers of England at that time said this could not be helped; it was the will of Providence.

The same thing happened on our western ranges during the eighties when the cattle population of the range states was increasing rapidly. Many cattle starved to death during severe winters. Later on these losses were prevented by the proper provision of roughages for winter use. The eastern farmer has been more provident in supplying feed for winter.

Roughages, as you well know, are divided into two large classes, namely, proteinaceous and carbonaceous. The legumes which are high in protein and ash are proteinaceous; and timothy and red top hay, cottonseed hulls, the straws, and corn and sorghum silage are classified as carbonaceous.

I do not know how much corn you grow in Maryland, hence do not know how much corn stover you have as a roughage. In Kentucky we have a great deal of corn stover for use, and it is not appreciated as it should be. Some farmers even sell it for 25 cents a shock, not realizing its great value as a roughage. Corn stover contains a fair amount of protein and ash and if well-cured and fed early it is not only nutritious but appetizing for the cow, horse and sheep. It is a common practice with us to feed corn stover to steers in the late fall and early winter before the fattening ration is begun. Our experience is that, while this is an excellent feed at this time, it does not contain sufficient protein to keep a steer from some shrink, and that it pays to supplement it with 1 to 1½ pounds of cottonseed meal per head per day until the steers are put on a fattening ration.

Of course the best way to utilize the roughage of the corn plant is to ensile it by ensiling the whole corn plant in the silo. Silos, however, are not as popular in connection with beef production in some states as they were some fifteen years ago, due mainly to the expense of erecting them as well as the cost of filling them. I believe that the unprecedented drouth experienced this summer, coupled with the great scarcity of roughage, will again popularize the silo. The Kentucky Experiment Station will build an additional beef cattle barn next spring, and this building will be equipped with two silos, one of moderate diameter to hold silage for winter use, and a narrow one which will be filled with corn, or with corn and sweet sorghum mixed, and kept in readiness for summers of pasture shortage. Fortunately, we had a silo full of silage this past summer, and as a consequence it maintained our beef herd at a nominal cost during one of the most severe drouths known to our state.

It has been a question whether steers make good gains on grass following silage-feeding during the winter. In three years' experimental work at the Kentucky Station we obtained the following results: In the first experiment, the steers which received silage during the winter made 20 per cent larger gain on grass the following summer than the lot which did not receive silage during the winter. In the second experiment, the steers which received silage during the winter made 66 per cent greater gain on pasture than did the steers which received no silage during the previous winter. In the third experiment, the steers which received silage during the winter made 20.4 per cent less gain on pasture than did the steers which did not receive silage during the winter.

The combined winter and summer gains, with the exception of the first experiment, were greater with the steers which received silage during the winter. In the first experiment, the combined winter and summer gains of each lot were practically the same. In the second experiment, the steers which received silage during the winter made 16.6 per cent greater winter and summer gains combined than did the steers which received no silage duringe the winter. In the third experiment the steers which received silage during the winter made 4.5 per cent greater combined winter and summer gains than did the steers which received no silage during the winter.

In each of the three experiments, the total cost per cwt. gain was less with the steers which received silage during the winter. In the first experiment the cost of winter and summer gain was 12.5 per cent less with the steers which received silage during the winter than with those which did not receive silage in their ration. In the second experiment, the cost per cwt. gain for the winter and summer gains was

38.9 per cent cheaper with the steers which received corn silage in their ration during the previous winter. In the third experiment, the cost of the winter and summer gains was 12.8 per cent less per cwt. with the steers which received silage in their ration during the winter. The income over feed and pasture costs was decidedly in favor of the "winter silage-fed" steers.

Sweet sorghum is popular with some feeders as a source of silage for beef cattle, the claim being that it is about as good pound for pound as is corn silage and that the yield is considerably larger. In five years' experimental work we found that sweet sorghum out-yielded corn by fifty-six per cent. On the other hand, it was only seventy-two per cent as efficient, pound for pound, as was corn silage in the production of gains with beef cattle; therefore, worth only seventy-two per cent as much as corn silage per ton. It costs more to produce and harvest an acre of sorghum silage as compared with an acre of corn silage. The lots of steers receiving corn silage and those receiving sorghum silage received the same amounts of corn and cottonseed meal in each of the three trials. Taking everything into consideration, the sorghum silage was only ninety-two per cent as economical as was corn silage in the fattening of steers, when considered from an acre standpoint. This year, however, it would have been better to have relied on sorghum. We believe that as time passes a mixture of these two crops will be used for silage for the breeding herds of beef cattle for the following reasons: First, it will produce a larger tonnage of silage than will corn alone, especially in a dry season; secondly, and the most important reason, sorghum is so full of sap that you can allow the corn to become riper when put into the silo than if it were used alone. A breeder of purebred beef cattle in Western Kentucky told me recently that 12 acres of this summer's crop of a mixture of corn and sorghum filled a 14 x 40-foot silo full and a 12 x 30-foot silo one-half full of silage. I figure this yield to be about 13 tons of silage per acre, while the average yield of corn in Kentucky this year, due to the drouth, was about six tons per acre. This man's method of planting is as follows: He plants three pints of Red Top Sorghum seed per acre. This amount he mixes with 125 pounds of fertilizer and puts the mixture in the fertilizer compartment of the corn drill. This he uses to dilute the sorghum seed to the right proportion for seeding rather than to add fertility to the soil. He drills his corn so that the kernels drop 12 inches apart. He thus has sorghum and corn growing in the same row. This mixture will not produce as rich a silage in nutrients as would corn alone, but the extra tonnage is more valuable in feeding a breeding herd and young cattle during the winter months.

Legume hays are very essential to profitable livestock production. In our own state an effort is being made to produce all such hays that we need. If this were done, it would cut down the cost of production of meat and milk to a very great extent, as we have been importing annually about 25 million dollars worth of feed stuffs in concentrates, grains and roughages. In 1926 we figured that we had just half of the acreage of legumes necessary to provide supplementary nitrogenous roughage for our non-legume roughages. The acreage planted to legumes has increased rapidly since 1926. The extension specialist in farm crops for the Kentucky Experiment Station, Mr. Ralph Kenney, informed me recently that had it not been for the 1930 drouth, the acreage of alfalfa, red clover, sweet clover, soy bean, cow pea, Japanese lespedeza, and Korean lespedeza would have been sufficient to meet our needs. Korean lespedeza has become very popular with us during the past two years. With the exception of Sudan grass, Korean lespedeza produced more pasture than any other crop this summer. It is not only an excellent grazing crop but produces from one to three tons of hay per acre. If it had not been for the drouth, Kentucky would have grown sufficient Korean lespedeza seed this year to sow 500,000 acres of this forage in 1931. Considering the production of all legume hays, we expect to have a sufficient acreage to meet our needs by 1933.

A state not only needs to produce most of its roughages for winter use but it should also increase and improve its pastures so as to provide feed in the summer. Pasture is the only really cheap feed produced on the farm. Pastures in the Blue Grass Region of Kentucky produce abundantly, but in other sections of the state this is not the case due to lack of fertility and improper seeding. It is surprising to learn what can be accomplished in the way of improving pastures on run-down land, as is shown in an experiment conducted co-operatively by the Department of Agronomy and the Department of Animal Husbandry at the Kentucky Sub-Experiment Station Farm in Western Kentucky. By a legislative act, the Station secured this farm for experimental purposes in 1926. The land on parts of this farm was so worn that it would not produce three bushels of corn per acre and the pasture consisted of a very scanty growth of common lespedeza and some wild grasses. Thirty acres of this farm were divided into three ten-acre fields for pasture experiments. Parts of each of these three fields had some gullies. On plowing terracing was done as a means of preventing further gullying until a pasture could be established to prevent it.

Each of these three fields was treated as follows:

Field No. 1—10 acres—No treatment.

Field No. 2—10 acres—Was treated with 1,200 lbs. of raw phosphate per acre at a cost of $8.00 per acre.

Field No. 3—10 acres—This field was treated with 1½ tons of limestone and 600 lbs. of acid phosphate per acre at a cost of $11 per acre.

The following grass mixture was used per acre on all three fields: orchard grass, 6 pounds; Canada blue grass, 2 pounds; Kentucky blue grass, 2 pounds; common lespedeza, 1 2/3 pounds; Korean lespedeza, 1 2/3 pounds; white clover, 1 pound; red top, 1 pound; sweet clover, 2 pounds. The sweet clover did not grow on fields 1 and 2 on account of not being limed. These pastures were grazed in 1929 with 550-pound steers. The average number of steers on field 1 was 2; on field 2, 5.4 steers; and on field 3, 6.7 steers. The total steer days were 332 for field 1; 888 steer days for field 2; and 1,104 steer days for field 3. The steers running on field No. 1 gained 405 pounds; those on field No. 2, 1,605 pounds; and those running on field No. 3 gained 1,645 pounds. The steers were valued at $10 per cwt. at the end of the trial. Crediting beef at 10 cents per pound, the gross return per acre from field 1 was $4.05; from field 2, $16.05; and from field 3, $16.45.

From this discussion I hope to have shown that the agriculturist can keep down his production costs and thus increase his profits by the proper provision of roughages for winter and summer use; the use of the silo when practicable; the increased production of legumes for pasture and hays; and pasture improvement.

MR. BAYARD: Have you ever tried planting southern corn along with silage?

PROF. GOOD: Yes, and I approve of it.

MR. BAYARD: In the corn that you plant for silage crop you want to mature, mix some of the southern corn along with it and you will have enough moisture for other corn.

QUESTION: How far north will the lespedeza grow?

PROF. GOOD: I don't know, but it will grow farther north than Kentucky. It grows on sour land, sweet land, on poor land and on rich land. Seed it the same as you do clover.

PRES. HARVEY: We have enjoyed Professor Good's talk and I am sure that there will be a number of additional questions to ask.

QUESTION: What time of the year would you plant?

PROF. GOOD: Generally in the spring after you plant spring clover, but some just plant it any time.

MR. JONES: Does it make good hay?

PROF. GOOD: Yes, excellent hay.

PROF. CLARK: How many pounds of seed is used to the acre?

PROF. GOOD: Twenty to the acre.

PROF. CLARK: What time of season do your men turn their cows on blue grass pasture?

PROF. GOOD: About the 10th of May, as a usual thing.

PROF. CLARK: Do any of your cattlemen ever attempt to winter cows on dry blue grass during winter?

PROF. GOOD: Some do, but as a usual thing most don't attempt it because sometimes the pastures are covered with snow.

PRESIDENT HARVEY: We will be interested in hearing Dr. Atherton tell us about the 1930 Hog Cholera Work in Maryland.

HOG CHOLERA RESULTS IN MARYLAND IN 1930

BY I. K. ATHERTON, V. S.,*
College Park, Md.

Mr. President and Gentlemen:

It is a very great pleasure to be with you today, and an honor to have the opportunity to make my annual report for your consideration.

Regardless of the hard luck and disappointments suffered by the farmers on account of the drouth during the year 1930, we have an excellent report to make regarding the health of the swine in Maryland. In fact, it has been the best year, so far as hog cholera is concerned, since the hog cholera work was inaugurated in Maryland in 1917.

Only 219 outbreaks were reported during the year, against 334 in 1929, and an 11-year annual average of 565. It is interesting to note that 55, or approximately 25%, of these outbreaks were in garbage-feeding plants, and that 72% of all hogs involved were in such places.

We are wondering if we dare hazard an opinion as to what is responsible for this drop in the number of outbreaks of cholera. It has been reported that at least five of the hog-raising states in the Middle West experienced more hog cholera than in 1929, and that the disease was in a very virulent form. It has been our experience that such conditions were always followed by an increased number of outbreaks in Maryland. We hope that the improvement was due to caution on the part of the hog raisers. It is certainly to be expected that fourteen years of educational work would produce some striking results.

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* Deceased January 27, 1931.

To our great surprise, the general health of the hogs during the year was very good. Extremes in climatic conditions are usually responsible, directly or indirectly, for some disease and losses among livestock. No one can deny that we had extremes in climatic conditions in 1930, and yet the swine losses during the year, from all causes, were apparently much below the average.

The following table gives the hog cholera outbreaks by counties, compared with an 11-year average, and the percentage distribution of hogs in the counties of the State.

County	Distribution of Maryland Hogs Per Cent	Hog Cholera Outbreaks	
		11-Year Average	Reported in 1930
Anne Arundel	2.	27.8	9
Allegany	1.7	6.1	0
Baltimore	5.3	21.4	8
Calvert	1.2	6.6	6
Caroline	2.9	10.8	4
Carroll	9.3	13.6	15
Cecil	3.	22.4	1
Charles	3.	12.7	7
Dorchester	2.	36.8	7
Frederick	13.7	31.6	8
Garrett	2.7	.2	1
Harford	2.9	13.3	2
Howard	3.6	11.9	4
Kent	4.1	31.7	2
Montgomery	8.5	29.1	13
Prince George's	4.2	28.9	41
Queen Anne	6.1	19.2	12
St. Mary's	3.7	17.	8
Somerset	1.5	29.	28
Talbot	2.9	31.8	2
Washington	10.3	78.3	3
Wicomico	2.5	35.3	20
Worcester	2.9	49.7	18
State Total	100.0	565.2	219

An analysis of the outbreaks reported during the year is not only interesting, but we believe that it supplies good evidence to show that, if Maryland hog raisers will observe the Maryland Plan for the Prevention of Hog Cholera, the disease will be practically eradicated from the State.

One hundred thirty-three of the outbreaks were classed as backyard; that is, a few hogs were kept in small pens under backyard conditions. Eighty-six occurred on farms where hogs are bred and raised. However, garbage-feeding plants were maintained on 30 of these farms. Therefore, outbreaks of hog cholera were reported from only 56 farms on which some care is used to observe sanitary conditions. If outbreaks associated with garbage-feeding plants are omitted, according to the latest census data, hog cholera was reported from only one farm in each 465 in Maryland on which hogs are bred and raised. It might also be interesting to note that, for an 8-year average, the outbreaks on farms where hogs are bred and raised has averaged less than .7 of 1%.

Two hundred eleven of the outbreaks were classed as primary, or new, cases of the disease, while 8, or only 4%, were secondary, or due to a spread of the infection from nearby premises.

One hundred eighty-six, or a little less than 90% of the 211 primary outbreaks, were due to infected pork in garbage, table scraps, or kitchen swill. Twenty-three were due to the purchase of new stock. In two instances, the owner could not or would not give any information from which to determine the source of infection.

All of the eight secondary outbreaks were caused by the infection being spread by sick hogs. In six instances, the outbreaks were caused by hogs running at large, or meeting other animals at line fences. Two outbreaks were caused by the movement of sick hogs to nearby premises.

Questionnaires covering 200 outbreaks have been received, and we believe this is sufficient on which to base the losses for the year. According to data derived from this source, the losses in backyard outbreaks have averaged 3; those on farms have averaged 9; and in garbage-feeding plants the average loss has been 22 hogs per outbreak.

The estimated loss in all outbreaks reported, based on the averages just given, is 2,113 hogs. The losses in backyard outbreaks and on farms, not including farms on which there were garbage-feeding plants, were 399 and 504 hogs, respectively. The losses in garbage-feeding plants were estimated at 1,210 hogs, or approximately 60% of the total loss in all outbreaks.

While it is believed that over 90% of the outbreaks are reported each year, it has been our custom to add 20% to the losses in order that it would not be possible to find any fault with our estimate. Twenty per cent of the reported losses would be 422 swine, making an estimated total of 2,535 hogs lost in Maryland during 1930. This is an average of 12 hogs per thousand. However, if garbage-feeding plants are excepted, the loss was only 5 per thousand.

The double treatment was administered to 114 herds on 76 premises. Ninety-nine of these herds were fed on garbage. The double treatment was administered to the hogs on only 15 farms other than garbage-feeding plants. In 5 instances, the hogs were sick when treated.

It was possible to investigate the results in 88 of the herds to which the double treatment was administered. In two instances, it was impossible to get any history of value. Investigation of the other 86 herds showed that there were "breaks" or losses as the result of the administration of the treatment in 14 herds, or 16½% of those investigated.

Prince George's County led in the number of outbreaks during the year with a total of 41 cases of the disease. However, 32 of these were in garbage-feeding plants.

The greatest improvement was in Washington County. The annual average in that county, for an 11-year period, has been 78 outbreaks of the disease. In 1930, only three cases were reported.

It is not infrequent that one hears the statement: "Vaccination is the only known method of preventing hog cholera." This may be true when the disease has appeared in a herd, or when the animals have been exposed to the infection. In fact, vaccination is the only method that will minimize losses when the disease has made its appearance, or the animals have been exposed to the infection. However, the prevention of hog cholera is largely a farm management problem, and the sooner this is recognized, the better.

A review of the outbreaks reported during 1930 is good evidence that when an outbreak of hog cholera occurs, it is due, without exception, to some human agency which could have been controlled. When a farmer's hogs contract hog cholera, it is, in most instances, his own fault, and there is very little excuse for his permitting the spread of the infection from his premises.

The regrettable part of the report which we have to make today is that the swine population in the State of Maryland has dropped over 50% in the last 10 years. We believe this is to be greatly deplored. When all is said and done in regard to farm relief, it is our opinion that the keeping of one or more sows on every farm of reasonable size in Maryland would do much to help fill the family larder and add a great deal to the family pocket-book.

MR. MAGRUDER: Other than feeding garbage what's the cause of hogs having cholera?

DR. ATHERTON: There are just three methods of starting outbreaks of cholera:

1. Bringing of infected hogs into your herd.
2. Feeding of infected pork.
3. Abuse of double treatment.

These are the only ways that I know that hog cholera is started.

PRESIDENT HARVEY: Prof. W. E. Hunt will now tell us something of sheep experiments at the University of Maryland.

MARYLAND SHEEP EXPERIMENTS

BY W. E. HUNT, College Park, Md.

Your Secretary has asked me to outline briefly the sheep experimental work, completed or in progress, at the University of Maryland Agricultural Experiment Station. I am going to make it brief and sketchy for reasons in addition to the request of the Secretary. As you know, Dr. Abbott is scheduled to give an address on "Pasture Improvement" before the Maryland Crop Improvement Association this morning. I am sure that all livestock men are much interested in pasture, and therefore I am going to make it a point on my part of this program so brief that we will all have an opportunity to hear Dr. Abbott.

Experimental work with sheep, as well as other animal husbandry experimental work, is tremendously handicapped at the Maryland Experiment Station by lack of land, equipment, and funds. We have been doing our best to conduct livestock experimental work with facilities which all feel are not adequate for even the limited amount of work we have attempted to do. We have attempted to do experimental work with equipment and shelter which, I am sure, many of you will call inadequate for even a rather crude form of commercial production. In spite of such handicaps, however, there have been a number of experimental projects under way. My connection with the Experiment Station dates back to the fall of 1925, and the sheep experimental work here outlined dates from that time.

The first sheep experimental project started was a study of "The Effect of Castration of Market Lambs on the Quality and Palatability of the Meat Produced". This project was undertaken in co-operation with the United States Department of Agriculture as one of a group of projects in the national co-operative project, "The Factors Influencing the Quality and Palatability of Meat." The actual work on this project was concluded about a year ago, and at present the data are being prepared for publication. I am sorry that it is impossible to make a complete report of the results of this experiment at this time; however, we hope that will be available to all desiring it by the middle of the summer.

The second project with sheep is of a general nature and has served to make available a general view of the sheep industry of the state. It has pointed out some important problems which we are attempting to solve by the organization of other experimental work. This project is "A Survey of the Maryland Sheep Industry," and I see a number in the room who have generously contributed their time and attention to answering what seemed to be an endless list of questions regarding their sheep husbandry activities. The assembling of these data from all over the state has emphasized four Maryland sheep problems of importance. These problems are: (1) the importance of legume hay; (2) the value and use of winter pasture; (3) the question of the correct type of breeding ewes and rams; and (4) the problem of parasite control. As a portion of this survey, in order to obtain first-hand information regarding the carcass quality of lambs produced under conditions typical of Maryland early lamb raising sections, a number of lambs were purchased from Maryland producers, and careful, detailed slaughter tests were made. Report on this piece of work was made at the time of the last Annual Meeting and is contained in last year's printed report of the Stockmen's Association.

Several years ago a trial was made to compare soy bean hay with alfalfa hay for the production of early lambs. It was found that soy bean hay of good quality compared very favorably with a good quality of alfalfa hay. Gains were practically alike, and the chief difference noted was that the alfalfa hay lambs seemed to have a trifle more bloom than did those in the soy bean hay lot.

The fourth project was started rather recently, and it has been made possible by the co-operation and assistance of our good friend, Mr. J. H. Baugher. He provided the Experiment Station with 72 head of lambs from the yards for a study of "The Improvement of the Market Desirability and Carcass Quality of Cull Lambs." This work has involved (1) a comparison of lambs grading on the market as "low mediums" with those grading as "culls", and (2) methods of handling and feeding cull ram lambs. (Incidentally, in studying this phase of the project, one lot of rams was placed on a ration containing fish meal as a protein supplement. The uniform, rapid, and efficient gains made by these lambs indicate that possibly fish meal will prove to be a valuable supplement for sheep feeding. Before any recommendations regarding this can be made, however, it is important that additional experiments be conducted.) This feeder lamb project also involves (3) a study of the changes in the amount and distribution of lean, fat and bone in a carcass as a result of the fattening process,

(4) a comparison of the palatability of shoulder roasts of lamb as compared with leg roasts of lamb, and (5) the effect of a sub-maintenance period (a period of loss in weight just previous to slaughter) on the quality and palatability of the meat. The last three phases of this project are conducted in co-operation with the United States Department of Agriculture as a "Quality in Meats" project. The cull lambs which show evidence of good breeding, when treated for parasites, and fed adequate, well-balanced rations, have made as rapid and efficient gains on feed as good feeder lambs fed on similar rations. We should like to do more work with these cull lambs before definite recommendations can be made regarding their feeding and management. It does look as though there is an opportunity for skillful feeders to use these thin native lambs to their profit, and the improvement in finish will benefit the entire lamb trade.

A fifth project has been undertaken to study the "Relation Between the Type and Size of Breeding Ewes, and the Rate, Efficiency, and Profitableness of Early Lamb Production." This is a phase of a general project on "Marketing Lambs at an Early Age." A preliminary report of this project was made at the time of the Students' Livestock Show and Sheep Field Day, held at the University of Maryland last May. The ewe flocks at the University, consisting of 24 purebred Hampshire ewes, 21 grade Delaine ewes and 25 Dorset x Merino ewes, have been carried on this project for the last three years. With the data from this year's lamb crop, the information obtained to date will be published. At the present time results of this experiment indicate that the smaller ewes produce more salable lamb and wool per unit of feed supplied than the big ewes. The big ewes, however, produce faster-growing lambs, which weigh more at a given age than lambs from small ewes. Details of this work will be available by the time of the next Annual Meeting.

The foregoing constitute all of the present sheep experimental projects of the University. We would appreciate it if growers will inform us of special problems which could be solved wholly or in part by experimental work at the

Experiment Station. The Experiment Station is intended for that purpose. I assure you that all connected with the Experiment Station, and the members of the animal husbandry staff, in particular, are anxious to be of maximum service to the sheepmen and other livestock interests of the State. With our present equipment, it is possible for us to do only very little. With the co-operation and support of the livestock interests of the State, we will have, I am sure, in the near future, more adequate facilities with which to conduct experimental work which will be of assistance to this million-dollar sheep industry of Maryland.

On account of the fact that it was not practicable to hold a joint session with the Maryland Crop Improvement Association on Wednesday morning to hear the address by Mr. J. T. Abbott, Agronomist of the National Fertilizer Association, Mr. Abbott kindly consented to address the Maryland Stockmen's Wednesday morning session. His address on "Pastures" was full of interesting information, and he answered numerous questions concerning the important work that he has been doing in cooperation with different institutions to secure dependable information concerning the improvement of pastures. Members of the Association are invited to communicate with their secretary if they care to secure valuable bulletins concerning this work, which is of much importance to Maryland stockmen.

SECOND SESSION

The second session of the 1930 Annual Meeting took the form of a six o'clock dinner-meeting at the Claremont Hotel, Union Stock Yards, Baltimore. As has always been the case at these dinner-meeting sessions, the best of good feeling prevailed, and an interesting program was presented. The hotel management provided an abundant supply of delicious food and cared well for the comfort of the guests. President W. R. Harvey presided as toastmaster.

The following concerning the Wednesday evening dinner-meeting session is largely taken from the Baltimore Drovers and Traders Journal, whose reporter, Mr. M. J. Sullivan, took excellent notes throughout the session:

President Harvey first introduced Dr. R. A. Pearson, President of the University of Maryland, who congratulated the assemblage on the fine turnout in the interest of the livestock industry. He described the wonderful work in animal breeding accomplished in England and stated that "by putting into practice the knowledge we have, we can make the State of Maryland as great as any State in the Union or any country on the globe in the production of fine livestock."

Professor E. S. Good, of the University of Kentucky, Lexington, Ky., complimented the stockmen on the excellent marketing facilities here, said it was a very happy thing to have the banquet at the stock yards, and brought greetings from Kentucky stockmen to the stockmen of Maryland.

On introducing the next speaker, Mr. J. H. Baugher, President of the Union Stock Yard Co., Mr. Harvey said: "Very few of you know how far the Union Stock Yard Company has gone to make the annual livestock show a success. They paid every nickel of expense attached to the show in October, amounting to over $9,000, the credit being almost entirely due to Mr. Baugher, so we can't feel too kindly to them."

Mr. Baugher, after welcoming the stockmen on behalf of the officers of the Union Stock Yard and the commission men, described incidents of the Baltimore livestock trade, beginning with the first drove yard in 1850 up to the present time. He said in part:

"Baltimore has always been a large livestock market. I came to the yards when I was very young and I have never known any other business. In the eighties, Baltimore was one of the principal export markets of the country. Years ago, only light hogs could be sold here. Now, thanks to the packing industry which has grown up here, we can use any weight of hogs, sheep, calves or cattle; and I can safely say there is no better livestock market anywhere than we have here. The packers will take all that can be produced.

"When the export business was at its height, the biggest and heaviest cattle brought the best price. Now, the tendency is to the baby beeves. Get good sires and good stock and feed them, and if there should be any who don't know how, the men at College Park will tell all about it."

The next speaker was Mr. E. S. Bayard, of Pittsburgh, cattle breeder, editor of the Pennsylvania Farmer and trustee of Pennsylvania State College. Mr. Bayard kept his audience in an uproar by interspersing more than a dozen very funny stories through his address. He said: "Co-operation is a fine thing if it goes all the way; by this I mean real co-operation instead of tampering with legitimate business. As producers we can't get along without other agencies co-operating with us, but I wish business would be let a little more alone in this country without the interference of busybodies.

"For many years the agricultural press was the only agency that looked after the agricultural interests. Wonderful things have been done, but many things remain to be accomplished. I remember when hogs sold at $3.00 a hundred. Since then I have seen a man make a mistake of $46.00 in the price of one hog. It was during the war. I also remember when it was thought that peanut butter and vegetable oils were going to put the cow out of business. Cows are now selling higher than they were then. I remember when a carload of sheep, shipped to a certain market, after all charges were summed up, did not bring enough to pay all the freight charges. It's all foolishness about synthetic foods putting us out of business, but we've got to use our heads. The incompetent man in all lines has been going out of business. And we've got to think not only of personal affairs, but of public affairs.

"Diligence has got to be of the head as well as of the body. There was never a time like the present when so much valuable information could be obtained free, through the press, radio and other modern means. With all of these opportunities we ought to be ashamed of ourselves if we do not take advantage of it. The American farmer has the best opportunity of any farmer in the world."

Mr. Bayard urged his hearers to take more interest in public affairs, and said: "Congress is spending a million and a half of our money speculating in wheat. We weren't thinking or it would not have been allowed."

Mr. W. S. Chichester, of Aquasco, Md., gave an interesting talk in which he related some of the experiences he has had in Virginia and Maryland, and especially in the Far West, where he spent about four years nearly a half-century ago. He began with the battle of Bull Run, which took place near the Virginia home in which he was born five years previously. He recalled some Yankee soldiers who, after raiding a barnyard and tieing a flock of ducks and blue-head drakes to their saddles, were sarcastically reminded by the owner that they forgot to burn the barn, whereupon they came back and burned it to the ground. He described the struggle of the farmers to rehabilitate themselves after the war, when all stock was fed out in the open the year round and feed was scattered on the snow.

When he grew up he got "Texas fever" and, in 1882 went to the Lone Star State and took up the work of herding sheep on the prairies for $20 a month and his board. This, he said, "was the damnedest job a man ever had." He afterwards became a cow puncher and acquired a liking for wild sports, particularly enjoying wild horses, wild dances and Texas girls. He described a drive of 3,000 head of cattle, in which he took part, from Texas to Montana, which lasted from March to September, during which time he slept on the ground every night. Mr. Chichester concluded by inviting those present to visit him at his home in Southern Maryland where he conducts a general farm and grows tobacco on a large scale.

Mr. William Schluderberg, of C., buyer for the Schluderberg-Kurdle Co., was introduced as the next speaker, in place of Mr. William F. Schluderberg, president of the company, who was unable to be present. Mr. Schluderberg, whose subject was "The Packer and the Livestock Producer," said in part: "I feel, so far as the State of Maryland is concerned, that the opportunity to produce and finish meat products is on a level with any State in the whole universe. I recently had an opportunity to visit Mr. Maguire Mattingly in St. Mary's County and found, to my surprise, as fine, rich quality of soil as one could see anywhere. His splendid hospitality was even finer than the soil and I am inclined to agree with the owner, who calls that section the garden spot of the world.

"The producer, the commission man and the packer each has a business of his own, and each must use not only his muscle but nearly 100 per cent of his brain. If the young livestock raisers will stay at his job on the farm, I'll guarantee that success will be his and it cannot be otherwise. God gives every human being an opportunity in this great country, but he must use his head, as well as his hands.

"The demand for heavy weight cattle must fade out of the picture. Housewives now want cuts from light weight cattle and they want quality. I never knew a man to last in the retail business who handled rubbish. The palate of the poor man is just the same as the rich man's. Through experience gained in visitations with a chain store manager I found no difference in the quality of meats in the poor and the rich neighborhoods.

"So eager have been the packers and the stock yards company to make this market a success that they are always willing to lend substantial aid for the purpose of improving the quality of livestock. Quite a few feeder calves of good breeding have been put on sale by various packers. The average city man harbors the idea that the livestock industry is a small game. Last year, I was one of a committee of three who called on the Mayor of Baltimore in the interest of the business. We were referred to the Board of Estimates, and they were greatly surprised when I told them that thirty to forty millions of dollars worth of livestock is slaughtered annually in Baltimore, which is more than is slaughtered in either New York or Philadelphia."

Mr. Schluderberg stated that the Schluderberg-Kurdle Company employes 860 people, not one of whom was laid off or lost an hour during all of the business depression. He said opportunities are just as good now as they ever were and gave an interesting description of his own successful career, starting as a policeman for four years, and when a change in political administration caused him to lose that job he went to work as a meat cutter in a department store at nine dollars a week. His recital of experiences was very humorous but he gained much useful experience. He concluded by assuring the young man on the farm today that if he "will use his brains and stick on the job he will find that opportunity was never better."

Dr. Thomas B. Symons, of the University of Maryland, who was to have awarded the prizes in the Maryland 150-Day 1500-Pound Litter Contest, attended the banquet but was unable to remain for the later ceremonies. Dr. F. B. Bomberger, who was introduced in his place, complimented Mr. W. R. Harvey on his successful management of the livestock show last fall and called for an appreciative hand from the audience which was given with vigor. Dr. Bomberger said the fact that nearly a half-million dollars was realized in sales at the show indicated the importance of this phase of the industry for its stimulating effect on the producer who cannot fail to have in mind the inducements of premiums and good prices. Continuing, Dr. Bomberger said in part:

"As you are all aware, we are indebted to the Schluderberg-Kurdle Company for the prizes—$800 in gold—offered in the Maryland Litter Contest. A member of this firm came to Dr. Symons several years ago and asked how they could best show their substantial interest in the production of swine. Prizes for this Contest were suggested and State-wide interest has been increased. The contests which were designed to produce from one sow a litter that will weigh at least 1500 pounds at 150 days have now gone so far above that weight that it may sometime be advisable to reduce the time to 140 days."

Dr. Bomberger announced the winners and distributed the awards as indicated in the tabular statement. Details concerning the winners in all Contests to date are also presented herewith.

ENTRIES IN 1930 MARYLAND 150-DAY 1,500-POUND LITTER CONTEST

Owner	County	Pigs in Litter	Date Farrowed	150 Days Old on
Guy Nelson	Baltimore	13	April 16	September 13
Chas. E. Roberts	Baltimore	11	March 22	August 19
McDonogh School	Baltimore	12	March 27	August 24
McDonogh School	Baltimore	12	April 10	September 7
Warner Pearce	Baltimore	9	May 31	October 28
Adam Mohr	Baltimore	9	February 28	July 28
Adam Mohr	Baltimore	11	March 5	August 2
Charles Ellwanger	Caroline	9	March 20	August 17
Charles Ellwanger	Caroline	10	May 24	October 21
Ralph T. Wilson	Cecil	10	March 18	August 15
J. S. and E. T. Cullen	Cecil	13	July 15	December 12
T. E. Zimmerman	Frederick	10	March 6	August 3
Curtis Zimmerman	Frederick	10	April 17	September 14
Jas. and Franklin Coddington	Garrett	8	February 22	July 22
Alan Clarke	Howard	10	March 6	August 3
Alan Clarke	Howard	10	March 13	August 10
Alan Clarke	Howard	9	March 13	August 10
Alan Clarke	Howard	9	April 4	September 1
Willis Cissel	Howard	12	March 18	August 15
Maurice Iager	Howard	9	June 4	November 1
Maurice Iager	Howard	11	May 29	October 26
C. C. Cissel	Howard	11	May 26	October 23
C. C. Cissel	Howard	9	May 31	October 28
Homer McLean	Howard	10	May 16	October 13
M. P. Edwards	Kent	9	March 19	August 16
Jesse J. Hurd, Jr.	Kent	10	May 7	October 4
Geo. W. Clendaniel	Kent	12	April 14	September 11
Stabler Bros.	Montgomery	9	March 18	August 15
Stabler Bros.	Montgomery	8	March 20	August 17
Wm. J. Hines	Montgomery	8	March 19	August 16
M. J. Stabler	Montgomery	11	March 21	August 18
W. S. Chichester	Prince George's	9	April 26	September 23
J. Kemp Bartlett	Talbot	9	June 13	November 10

Litters That Reached the Goal, and Prizes Won

Name	County	Weight of Litter at 150 Days Lbs.	Pigs in Litter	Prizes Won State	Prizes Won County	Amount
Maurice Iager	Howard	2203	11	1	1	$125
Ralph T. Wilson	Cecil	2086.5	10	2	1	100
T. E. Zimmerman	Frederick	2076	10	3	1	75
McDonogh School	Baltimore	1866.5	12		1	25
Maurice Iager	Howard	1853	9			
C. C. Cissel	Howard	1839.5	11			
C. C. Cissel	Howard	1776	9			
A. T. Clarke	Howard	1626	10			
W. P. Pearce	Baltimore	1587	9			
Chas. Ellwanger	Caroline	1576	10		1	25
H. Guy Nelson	Baltimore	1567	13			
A. T. Clarke	Howard	1561	9			
Jesse Hurd, Jr.	Kent	1535	10		1	25
						$375

State Cup Winners in Maryland Litter Contest

Year	Name	No. of Pigs	Age Days	Wt. Pounds
1925	Charles F. Hines	9	150	1612.5
1926	G. Carlton Oland	12	150	2423
1927	G. Carlton Oland	10	150	2093
1928	Stanley P. Stabler	10	151	1795
1929	J. S. & E. T. Cullen	13	151	2161.5
1930	Maurice Iager	11	151	2225

After the awarding of prizes, reports of their Litter Contest activities were presented by five of the winners. Reports from all six winners of 1930 State and County prizes follow:

REPORT OF STATE FIRST PRIZE AND HOWARD COUNTY FIRST PRIZE LITTER

BY MAURICE IAGER

Mr. Chairman and Gentlemen:

First, let me thank the Wm. Schluderberg-T. J. Kurdle Company who contributed these prizes. I also appreciate the honor of winning this year the silver cup offered by the Maryland Agricultural Society—The Maryland Farm Bureau Federation. I hope that with the aid of my neighbors, Mr. Cissel and Mr. Clarke, we will keep this cup in Howard County for 1931.

This litter of pigs was farrowed by a grade (Duroc-Jersey and Poland-China) sow, and was sired by a purebred O. I. C. boar. This litter had access to a 12-acre field with plenty of shade and running water, but on account of the drought had but little pasture. Ground wheat and a small amount of corn were self-fed. A slop of separated milk, white middlings, and a 28% protein commercial feed was fed three times a day—and every day.

FEED COST OF 11 PIGS—150 DAYS

495 lbs. middlings @ $2.25	$ 11.13
770 lbs. old corn @ $4.50 per bbl.	9.90
550 lbs. 28% pig meal @ $2.53	13.91
330 lbs. red dog flour @ $2.25	7.42
55 lbs. fishmeal @ $3.60	1.98
2805 lbs. ground wheat @ 85c	39.70
575 lbs. new corn @ $6.00	9.90
345 gal. skim milk @ 7c gal.	24.15
22 bu. fallen apples @ 10c bu.	2.20
Total	$120.29
Receipts	
2203 lbs. of live hogs @ 10c per lb.	220.30
State prize	100.00
County prize	25.00
Total received	$345.30
Subtracting feed cost	120.29
Returns above feed cost	$225.01

In conclusion, these results were secured by nothing mysterious, and there was no method used that was not possible for any good farmer to observe. Healthy pigs, balanced ration, cleanliness and regular feeding will bring the results. Again I thank you.

REPORT OF STATE SECOND PRIZE AND CECIL COUNTY FIRST PRIZE LITTER

BY RALPH T. WILSON

First, I want to extend my thanks and appreciation to the donor of this prize, the Wm. Schluderberg-T. J. Kurdle Company, who has so generously sponsored this contest. I also want to thank them for their courtesy and fairness to me when they bought these hogs. Let me say that I hope they will get every dollar back in increased business.

This litter of pigs was born March 18, 1930, fourteen in number. I thought my time had arrived. March 18 and 19 were warm, sunshiny days, then came a spell of cold, windy and cloudy weather. When things got straightened out we had 10 pigs instead of 14.

The mother of these pigs is a grade Poland-China, the sire a purebred Poland-China boar belonging to Mr. Ernest Cullen. In fact, these pigs are bred exactly like my last year's litter that weighed 1,873 pounds and took second place. This year my litter weighed over 200 pounds more and then got second place by only a few pounds.

I fed the sow a little steamed bran for the first few feeds after farrowing, changing her over to a 20% commercial feed with a little corn to keep up flesh. As soon as the little pigs would eat I fed them some pig meal and corn and wheat ground together, mixed with some skim milk powder that had been dissolved in water. By increasing the feed for the pigs and cutting down on the sow's ration, the pigs practically weaned themselves and did not know a change was taking place. I took the sow away entirely by the time the pigs were eight weeks old. The pigs were continued on the same feed; corn, 3 parts; wheat, 1 part, ground together, plus a 20% commercial feed, and the dried skim milk powder dissolved in water; this feed was given in the form of a slop.

I had secured 60 pounds of the powdered skim milk and was well pleased with it, but as we had more semi-solid buttermilk than we needed for the chickens, I fed about 100 pounds with equally good results. I prefer the skim milk while nursing the sow because I don't believe sour and sweet milk fed alternately work well, but after they are safely weaned, I believe one is as good as the other. At first I gave the pigs a little more than half of the 20% commercial hog feed, but as they got older, I gave more corn and wheat, till at last the commercial feed did not constitute more than one-sixth of the whole ration. I fed the milk diluted with water. After that was gone I gave the feed dry in a trough. They were fed three times a day during the first three months; after that twice a day. These pigs had the run of an old orchard of 1 or 1¼ acres, in which there are but eight trees left. The grass is very much like a lawn grass and makes excellent pasture. The hog house is in one corner; there I kept the feed and fed them. Across one end runs a little brook. There they got their water for both drinking and bathing. Without that brook I am quite certain my litter would not be among the first three. I don't think it possible for hogs to put on a maximum weight in weather like we had last July and August unless they have all the water they want all the time for both drinking and bathing. In fact, a friend sent me a clipping from the Philadelphia Evening Bulletin saying a pig that is bathed regularly will grow 20% faster than one not bathed. I didn't bathe these pigs; they attended to that part themselves. I never saw a bunch of boys have more fun in the water than these hogs had.

Now, as to the amount of their feed. I charged corn and wheat each at 90c per bushel plus 15c per hundred for grinding, making about $1.73 per hundred. The wheat was all old crop. The corn and wheat were mixed together in proportion of 3 to 1.

Feed Cost

4100 lbs. corn and wheat @ $1.73 per hundred	$ 70.90
1000 lbs. commercial hog feed @ $3.20	32.00
100 lbs. fishmeal @ $4.00	4.00
60 lbs. powdered skim milk @ 7½c	4.50
100 lbs. semi-solid buttermilk @ 4¼c	4.25
50 lbs. salt	.50
Grain cost	$116.15
Pasture charge	20.00
Total feed	$136.15

Receipts

2086.5 lbs. live hogs @ 12c	$250.38
2nd State prize, $75; 1st County, $25	100.00
Total returns	$350.38
Less feed and trucking charges	146.15
Returns above feed cost and trucking charge	$204.23

I received 12c per pound some days after the pigs were weighed, and they were worth that when weighed. It cost $10 to truck the hogs to Baltimore.

There are several lessons that can be learned from this Contest:

1. You must have good, big, thrifty, growthy stock capable of consuming lots of feed.

2. You must have the right environment, such as shade, pasture and running water.

3. You must give them the right feeds or combinations of feeds.

4. You can easily grow March and April pigs to market weight before the heavy run of hogs start.

One thing more I want to bring out. There were 7 males and 3 females in the litter. The males averaged 214.5 lbs., ranging from 195.5 to 229.5 lbs. The females averaged 195 lbs., ranging from 183.5 to 209 lbs., almost 20 lbs. less than the males.

I still have old Susie. She is bred to the same boar again, and if she raises 12 pigs next spring, we will make somebody hustle. There are nine counties on the Eastern Shore. So far, Cecil is the only one to win a State prize. Now we want to hear more from some of the counties "down shore." We can grow just as good and big hogs as our neighbors on the western shore if we try.

REPORT OF STATE THIRD PRIZE AND FREDERICK COUNTY FIRST PRIZE LITTER

BY T. E. ZIMMERMAN

My litter of pigs was born March 6, from a purebred Poland-China boar and a purebred O. I. C. sow. Their shelter was a pen which afforded good, warm protection during the cool days and they always had access to an out pen, both these pens having a concrete floor. During the extreme hot and dry season I attributed a great part of my success to the wallow in a spring branch and also to a meadow in which they were allowed to run all during the summer. Before weaning, the pigs were fed in a self-feeder, but the sow could not get to it. They were weaned at 10 weeks. After the extreme hot weather came on, I fed in a slop the same amount of feed that they had taken through the self-feeder. At 150 days the pigs weighed 2,076 pounds.

The kinds, amounts and value of feed used are as follows:

5950 lbs. skim milk	$14.00
2184 lbs. corn meal	42.90
1100 lbs. red dog flour	21.95
1200 lbs. ground wheat	15.00
12½ lbs. hog powder	2.25
100 lbs. 28% hog meal	2.65
Total	$98.75

When the pigs were 150 days old, live hogs were 10c per pound, making them worth $207.60. The feed cost was $98.75, leaving me a value above feed costs of $108.85. No charge for pasture is included. In a Ton Litter Contest at our County Fair I entered this same litter there and won a $40.00 premium, and from the Wm. Schluderberg-T. J. Kurdle Co., the third State prize of $50.00, and also the Frederick County first prize of $25.00, which I am very proud to receive tonight.

I appreciate very much what the Wm. Schluderberg-T. J. Kurdle Co. is doing in offering these prizes. I feel a great deal of valuable information is gained through these efforts.

REPORT OF CAROLINE COUNTY FIRST PRIZE LITTER

BY CHARLES ELLWANGER

As last summer was very dry in this section, I was forced to use some different feeds and pasture than with my litter in 1929. With last year's average weight per pig slightly higher than the year before, I will endeavor to give some comparison between the two litters.

The pigs, 10 purebred Poland-China's were farrowed May 24. When the pigs were five weeks old they were put on a pasture of oats and rape. I used red clover and timothy the year before. They were fed hog-feed, put up by Farmers Supply Co., in the form of slop while on the sow. After weaning they were entirely dry fed from a self-feeder. Fresh water was kept before them at all times. The exact amount of feed consumed by this litter cannot be given, as I have only a record of feed my entire herd consumed last year. I would like to say a word about the feed used. Last summer found us with a large crop of wheat and low prices, and upon advice from our County Agent, I used ground wheat for the first time, with good results. I mixed 10 to 12 pounds of fishmeal with every 100 pounds of ground wheat and fed a little ready-mixed hog feed along with it. This was kept before the pigs at all times. They also received a small amount of ear corn. Wheat was the main feed.

As this litter was farrowed late in the spring, they could not be put on the market until late in October, so I did not receive the highest prices of the season. This suggests that we should raise early spring pigs. I sold the litter a few days after weighing to a local butcher. They brought on an average $18.50 each. Since I used low-priced feeds, although not knowing the exact amount, I feel that I made a nice profit.

REPORT OF BALTIMORE COUNTY FIRST PRIZE LITTER

BY McDONOGH SCHOOL

The Duroc litter entered in the 150-day, 1,500-pound Litter Contest by McDonogh School was farrowed on April 4, 1920. At the close of the contest the twelve pigs weighed 1,885 pounds.

During the feeding period the litter was on pasture and was fed a commercial hog feed. They were finished off with shelled corn and at different times were given skim milk.

They consumed 4,265 pounds of the commercial hog feed valued at $95.93. Five hundred pounds of shelled corn was fed which was worth $10.25. Not including the cost of the skim milk, which was fed only occasionally, the feeding expenses totalled $116.18.

The litter was sold on October 30, at nine and three-fourths cents a pound. The check amounted to $183.79. This leaves a profit of $67.61, not counting the labor charge and about five or ten dollars' worth of skim milk.

REPORT OF KENT COUNTY FIRST PRIZE LITTER

BY JESSE HURD, JR.

I wish to take this opportunity to thank the Wm. Schluderberg-T. J. Kurdle Company for the prize just received for this Contest.

My litter of ten pigs was farrowed May 17. The sow was a grade Poland-China, and the sire was a registered Poland-China, Del Pride 2nd. At four weeks of age this litter of pigs was placed in a lot where it had free range on growing corn, and were fed a little 18% protein Farm Bureau feed. A little extra charcoal was also mixed in. The pigs were weaned at nine weeks of age.

At one hundred days of age the pigs had sufficient frame to start fattening them. They were "wormed" and placed on soy bean pasture. When they were 135 days old they contracted "flu" which caused them to lose considerable weight; however, by giving them careful attention, I saved all.

These pigs had free access to water. They were fed powdered skim milk in slop form during the fattening period. They consumed feed as follows:

Feed Costs

2000 lbs. 28% Farm Bureau Feed	$ 53.00
23 bu. corn	16.10
50 lbs. tankage	2.50
25 lbs. oil meal	1.75
50 lbs. 16% phos.	1.50
10 lbs. charcoal	.50
100 lbs. powdered skim milk	8.25
Total feed costs	$83.60

Receipts

Sold 9 pigs, 1350 lbs. @ 12c	$162.00
County prize	25.00
Total receipts	$187.00
Less feed costs	83.60
Receipts above feed costs	$103.40

I still have the best gilt.

I think that a Contest such as this one is not only educational but that it puts an extra amount of enthusiasm in one's work, thus making the farm a more enjoyable place to live.

THIRD SESSION

Lord Baltimore Hotel

Thursday, January 8, 1931

The third session was called to order by President Harvey, who appointed the nominating committee with a request that they report during this session.

PRESIDENT HARVEY: Professor Clark will now report concerning the Annual Purebred Ram Sales which have been held in Maryland for some years.

RAM SALES REPORT

K. A. CLARK, College Park, Maryland

Our Fourth Annual Centerville Ram Sale was held on July 29th, 1930. The result was 38 rams sold at an average of $30.72 per head. This year an Annual Ram Sale was started at LaPlata, the sale there being held on June 26th. It resulted in an average of $32.97 on 19 head of rams.

Our ram sales are becoming fairly well established. Perhaps the best evidence of this is the fact we were able to sell this year 57 rams at an average of $31.47 per head during a season when market lamb and wool prices were very low. Furthermore, our sales were well attended. There were really more buyers present than in former years. Also, the rams were scattered over a wider territory than was the case in former sales.

In their present state of development it may be said our ram sales offer a good place for commercial flock owners to purchase their breeding rams. They also offer to the purebred breeder a means of disposing of his rams.

In order still further to promote the many benefits of these ram sales it is imperative that purebred breeders give more attention to the quality and character of rams offered. Inferior rams should not be consigned to these sales. They have a depressing effect on the whole sale. In addition to this they contribute to the disrepute of their owner in such a way that he can not easily overcome the bad impression they create. Along this line, in 1930, we started shows of the sale rams. These were held immediately preceding each sale. They proved to be very interesting and instructive and will be held regularly in connection with future sales.

We propose to continue the two sales at Centerville and LaPlata and possibly start a third sale this year. There is still much room for expansion of these sales.

In the following pages are given complete reports of the Centerville and LaPlata sales and shows, together with a summary of all sales held during the last 5 years.

FIRST SOUTHERN MARYLAND RAM SALE REPORT

June 26, 1930

Consignors: (Letters in Sale Report Column Headed "Lot" refer to Consignor).

A. Leonard Snider, LaPlata, Md.
B. Robt. Murray & Son, Cumberstone, Md.
C. G. Bernard Fenwick, Glyndon, Md.
D. William Grelck, Woodlawn, Md.
E. Hobart G. Hutton, Brighton, Md.
F. John E. Muncaster, Jr., Derwood.
G. S. S. Stabler, Spencerville, Md.
H. J. W. Swaren, Brookeville, Md.
I. University of Maryland, College Park, Maryland.

Lot	Breed	Age	Buyer	Address	Price
A.	Hampshire	1	J. A. Cecil	Great Mills	$37.00
B.	Hampshire	1	J. N. Ryland	Riverdale	30.00
B.	Hampshire	1	Mrs. Annie Oland	Olney	37.00
F.	Shropshire	1	M. C. Sherman	Queenstown	42.50
F.	Shropshire	1	Walter J. Mitchell, Jr.	LaPlata	50.00
F.	Shropshire	1	W. B. S. Chapman	Spring Hill	37.50
G.	Dorset	4	Geo. Stevenson	Bel Alton	22.50
D.	Southdown	2	Susquehanna Farms	Pearson	20.00
C.	Hampshire	2	J. T. Hindle	Welcome	20.00
C.	Hampshire	2	W. A. Gallahan	Piscataway	21.00
C.	Hampshire	1	Susquehanna Farms	Pearson	26.00
C.	Hampshire	1	W. I. Armsworthy	Pearson	35.00
E.	Shropshire	1	Pere Wilmer	LaPlata	25.00
E.	Shropshire	1	M. C. Sherman	Queenstown	15.00
C.	Hampshire	1	E. I. Mudd	Clinton	32.50
H.	Hampshire	1	Geo. Quirk	Pearson	35.00
I.	Hampshire	1	Daniel Bowen	Prince Frederick	55.00
I.	Hampshire	1	B. F. Saul	Chevy Chase	48.00
I.	Hampshire	1	F. D. Hayden	Great Mills	37.50
				Total	$626.50

19 head; average, $32.97.

REPORT OF THE FOURTH ANNUAL EASTERN SHORE RAM SALE

July 29, 1930—Centerville, Maryland

Consignors: (Letters in "Lot" column refer to consignor).

A. M. C. Sherman, Queenstown, Md.
B. J. Edgar Bryan, Queenstown, Md.
C. Stanley M. Cox, Oxford, Md.
D. Isla Corporation, Easton, Md.
E. W. P. Evans & Son, Pocomoke, Md.
F. J. L. Cowger & Son, Pocomoke, Md.
G. Belair Farms, Bowie, Md.
H. John E. Muncaster, Jr., Derwood, Md.
I. Hobart G. Hutton, Brighton, Md.
J. E. D. Stotelmyer, Boonsboro, Md.
K. R. C. F. Weagly, Hagerstown, Md.
L. University of Maryland, College Park.
M. St. Amour Co., Coatesville, Pa.

Lot	Breed	Age	Purchaser	Address	Price
A.	Shropshire	1	E. F. Shanbacker	North East, Md.	$35.00
A.	Shropshire	1	Geo. K. Bailey	Earleville, Md.	24.00
A.	Shropshire	1	L. McG. Slaughter	Longwoods, Md.	21.00
B.	Shropshire	1	Geo. K. Bailey	Earleville, Md.	25.00
B.	Shropshire	1	Geo. K. Bailey	Earleville, Md.	36.00
B.	Shropshire	1	H. S. Startt	Chestertown, Md.	22.00
C.	Hampshire	3	H. S. Startt	Chestertown, Md.	25.00
C.	Hampshire	3	L. McG. Slaughter	Longwoods, Md.	29.00
D.	Shropshire	2	H. S. Startt	Chestertown, Md.	21.00
D.	Shropshire	2	L. McG. Slaughter	Longwoods, Md.	22.50
E.	Hampshire	1	Thirlstane Ranch	Bar Harbor, Maine	50.00
E.	Hampshire	1	Thirlstane Ranch	Bar Harbor, Maine	44.00
E.	Hampshire	1	Daniel H. Rue	Cambridge, Md.	42.00
E.	Hampshire	1	John L. Pascault	Easton, Md.	40.00
E.	Hampshire	1	L. McG. Slaughter	Longwoods, Md.	31.00
E.	Hampshire	1	Geo. O. Richardson	White Hall, Md.	39.00
E.	Hampshire	1	Perry Hitchcock	Kenton, Del.	34.00
F.	Hampshire	1	Norman Massey	Chestertown, Md.	15.00
G.	Hampshire	1	J. L. Cowger & Son	Pocomoke, Md.	34.00

REPORT OF THE FOURTH ANNUAL EASTERN SHORE RAM SALE—(Continued)

Lot	Breed	Age	Purchaser	Address	Price
G.	Hampshire	1	Fred Lewis	Cambridge, Md.	40.00
G.	Hampshire	1	Thirlstane Ranch	Bar Harbor, Maine	38.00
H.	Shropshire	1	H. S. Startt	Chestertown, Md.	20.00
H.	Shropshire	1	E. D. Stotelmyer	Boonsboro, Md.	36.00
I.	Shropshire	1	B. W. Townsend	Centerville, Md.	15.00
I.	Shropshire	1	E. D. Stotelmyer	Boonsboro, Md.	8.00
J.	Shropshire	1	H. S. Startt	Chestertown, Md.	26.00
J.	Shropshire	1	Geo. K. Bailey	Earleville, Md.	24.00
J.	Shropshire	1	H. S. Startt	Chestertown, Md.	28.00
J.	Shropshire	1	L. McG. Slaughter	Longswoods, Md.	20.00
J.	Shropshire	1	L. McG. Slaughter	Longwoods, Md.	18.00
K.	Hampshire	1	C. A. Kuehnle	Cambridge, Md.	40.00
K.	Hampshire	1	L. McG. Slaughter	Longwoods, Md.	30.00
K.	Hampshire	1	L. McG. Slaughter	Longwoods, Md.	31.00
L.	Hampshire	1	Mrs. J. W. Bigelow	Easton, Md.	40.00
L.	Hampshire	1	Mrs. Isaac Dixon	Chestertown, Md.	34.00
L.	Hampshire	1	E. J. Kirby	Trappe, Md.	30.00
M.	Hampshire	1	N. S. Stabler	Cossart, Penna.	50.00
M.	Hampshire	1	Belair Farms	Bowie, Md.	60.00
				Total	$1,167.50

38 head; average, $30.72.

A show of all the rams included in each sale was held. The winnings were as follows:

Southern Maryland Sale

Hampshire Rams

1st. Prize—University of Maryland, College Park, Maryland.
2nd. Prize—University of Maryland, College Park, Maryland.
3rd. Prize—G. B. Fenwick, Glyndon, Maryland.

Shropshire Rams

1st. Prize—J. E. Muncaster, Jr., Derwood, Maryland.
2nd Prize.—J. E. Muncaster, Jr., Derwood, Maryland.
3rd. Prize—J. E. Muncaster, Jr., Derwood, Maryland.

Southdown Rams

1st. Prize—Wm. Grelck, Woodlawn, Maryland.
2nd. Prize—Wm. Grelck, Woodlawn, Maryland.
3rd. Prize—Wm. Grelck, Woodlawn, Maryland.

Dorset Rams

1st. Prize—S. S. Stabler, Spencerville, Maryland.
(only one shown and sold)

Eastern Shore Sale

Hampshire Rams

1st. Prize—St. Amour Co., Coatesville, Pennsylvania.
2nd. Prize—St. Amour Co., Coatesville, Pennsylvania.
3rd. Prize—University of Maryland, College Park, Maryland.

Shropshire Rams

1st. Prize—J. E. Muncaster, Jr., Derwood, Maryland.
2nd. Prize—J. E. Bryan, Queenstown, Maryland.
3rd. Prize—M. C. Sherman, Queenstown, Maryland.

SUMMARY

Maryland Ram Sales
1926—1930

	Hampshires		Shropshires		Southdowns		Dorsets		Totals	
	No. Sold	Av.	No. Sold	Av.	No. Sold	Av.	No. Sold	Av.	No. Sold	Av.
College Park										
1926	22	$42.95	4	$34.00	.....	....	.....	....	26	$41.57
1927	12	28.41	.....	....	.....	....	.....	....	12	28.41
1928	10	36.90	5	27.00	.....	....	.....	....	15	33.60
Total	44	37.61	9	30.11	.....	....	.....	....	53	36.34
Centerville										
1927	14	36.34	13	40.38	.....	....	.....	....	27	38.46
1928	9	30.00	16	40.81	.....	....	.....	....	25	36.91
1929	35	61.60	10	47.90	.....	....	.....	....	45	58.46
1930	21	36.95	17	23.03	.....	....	.....	....	38	30.72
Total	79	47.02	56	36.58	.....	....	.....	....	135	42.66
La Plata										
1930	12	34.50	5	34.00	1	$20.00	1	$22.50	19	32.97
Totals	135	$42.84	70	$35.56	1	$20.00	1	$22.50	207	$40.17

PRESIDENT HARVEY: We will now hear from Mr. F. C. Bishopp of the U. S. Department of Agriculture. Mr. Bishopp will discuss "Some Insects Affecting Livestock." This is a subject of much importance to Maryland stockmen, and I am sure that what Mr. Bishopp will say will be of interest to us.

SOME INSECT PESTS OF LIVE STOCK IN MARYLAND

BY F. C. BISHOPP

Principal Entomologist in Charge Insects Affecting Man
and Animals, Bureau of Entomology,
U. S. Department of Agriculture

Insects are a serious handicap to successful livestock and dairy operations. Maryland has its share of these troublesome pests, and a better knowledge of their development and habits, and of methods of combating them is of distinct advantage to those engaged in livestock raising in any capacity.

All of our domestic animals and fowls are subject to the attack of insects. The damage caused by these pests varies with the method of parasitism and abundance. A great abundance of any one insect or the combined attack of several species makes the injury more apparent and the need of applying control measures more imperative. The consant drain by small numbers of parasitic insects may pass unnoticed; nevertheless, vigor may be lowered, growth and production reduced, and profits curtailed. Time will not permit of more than a summary account of some of the more important insect problems with which the stockman has to deal, and the suggestion of a few of the more practical methods of attack.

The Stable Fly and the Horn Fly

These two annoying pests are found throughout the state. They are both blood suckers and both live for several weeks, feeding repeatedly and laying several batches of eggs. The horn fly is principally a pest of cattle; it is smaller than the stable fly and usually congregates on the side of a cow in a sort of swarm, the flies always resting with their heads pointed downward. They feed much along the belly and on the escutcheon, where they frequently make sores. Under certain weather conditions they congregate around the base of the horns, hence the common name. They breed in cow manure, the eggs being laid on the fresh droppings. Here the larvae develop and ultimately produce flies about three weeks later.

The stable fly is distinctly larger and inflicts a much more painful bite. It remains on the stock only long enough to become gorged with blood, after which it flies to some nearby object upon which it rests while the meal is digesting. It prefers to bite horses and cattle on the fore legs, but when abundant it may attack the animal anywhere. This fly breeds in any fermenting vegetable matter, but prefers wet oat straw, horse manure, or old ensilage.

The annoyance due to the attack of the stable fly is in proportion to its abundance. Stock are kept constantly agitated in fighting it, milk production is materially affected, and finishing beef cattle is a matter of great difficulty when these flies are numerous.

The habits of these two flies at once suggest possible methods of destroying them. Since the horn fly remains on cattle almost constantly, fly sprays may be used to good effect against it. It is better to kill the flies than to attempt to repel them, and for this reason a spray should be used which is at once deadly to the flies and not likely to injure the stock. One of the most satisfactory sprays for this purpose is kerosene extract of pyrethrum. This mixture is now readily available under various trade names, or it is possible to make the spray on the farm. The systematic removal of manure from the barnyard and the breaking up of the droppings on pastures so that they will dry out quickly are steps which will tend to reduce the breeding of the horn fly.

In combating the stable fly, too much dependence should not be placed on the use of fly sprays. Those flies present on the animals may be destroyed, but this usually constitutes a comparatively small portion of the fly population about the premises. The removal of all manure and other decaying vegetable matter at least twice a week, and its thin distribution on fields which are to be plowed is the most practical means of lessening breeding. Attention should also be given to the care of straw left after threshing. Oat straw, particularly, should be either baled and stored in barns or well stacked so as to prevent deep wetting.

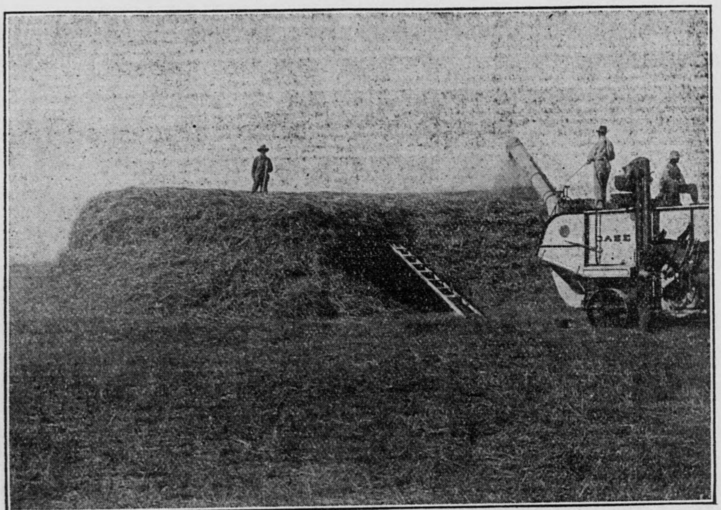

FIG. 1.—*Stack straw well. Wet straw breeds swarms of stable flies.*

The House Fly

The common house fly is not only an annoyer of livestock but has been clearly shown to convey diseases and parasitic worms to animals and man, both by direct contact and by contamination of food. Like the stable fly, it is a general breeder in decaying vegetable matter and all kinds of filth. Its control is brought about by the disposal of such materials as previously indicated for the stable fly. The use of killing fly sprays, the operation in suitable places of conical fly traps baited with blackstrap molasses or other attractive materials, and the adequate screening of all buildings where milk and other food products are handled are recommended.

The Horse Fly and Deer Flies

In many parts of Maryland serious trouble is experienced from the attack of horse flies, some of which are known as greenheads, and the small mottled-winged deer flies.

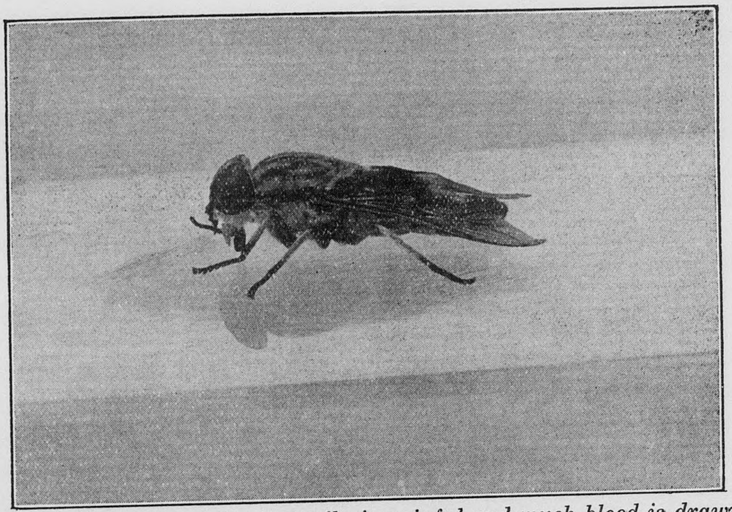

FIG. 2.—*The bite of the horse fly is painful and much blood is drawn.*

These flies have somewhat similar breeding habits. The eggs are usually deposited in masses on the leaves of trees or on reeds over the water, and the maggots, upon hatching, live in the mud or gravel, usually in close proximity to streams, sloughs or pools. The only effective method of reaching the maggots of these flies is to destroy them and eliminate their breeding places by draining the swampy areas and clearing off the banks of the streams. In many parts of Maryland such steps would not be practical, and dependence must be put on devices for the protection of animals from attack. In severe outbreaks it is best to keep horses and cattle housed in screened barns or sheds; killing fly sprays may be used to some extent, and net and blankets aid in protecting horses when in harness. These flies are such vicious biters as to make of little value substances usually used as repellents for other kinds of flies. Smudges bearing strong pine odors give a measure of relief.

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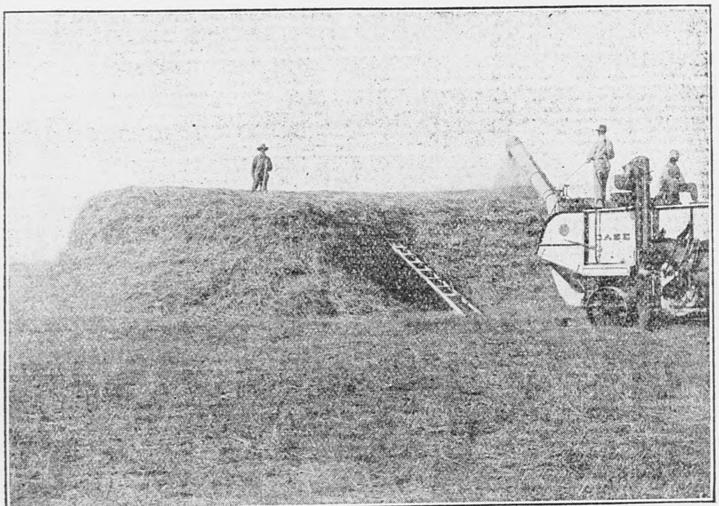

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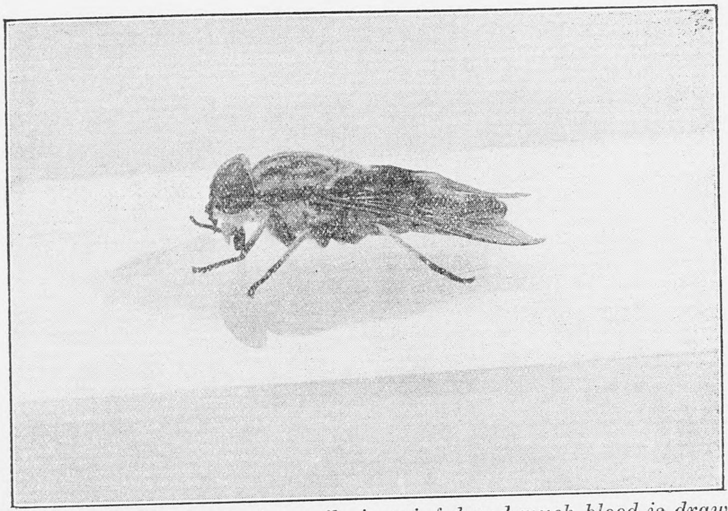

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Mosquitoes

Mosquitoes, when very abundant, cause severe annoyance to livestock and poultry. These pestiferous insects have very diverse habits, and it is not possible to outline even briefly approved methods of combating them. It may be said, however, that they breed exclusively in water, although dense vegetation will tend to harbor the adults. Some kinds of mosquitoes do not travel far, while others, such as the salt-marsh varieties, may go long distances from the marshes where they breed. Drainage of pools and marshy areas, the clearing of stream banks and the use of oil on pools which can not be drained are the principal ways of combating mosquitoes. Water barrels and cisterns should be either screened or treated with a small quantity of kerosene oil whenever wigglers are seen to be present. Smudges and fly sprays are of some value in protecting livestock.

Cattle Grubs or Warbles

The low-lying parts of Maryland are comparatively free from cattle grubs, whereas these pests are quite abundant and troublesome in the western part of the state. The adults of these insects, commonly called heel flies, are seldom seen, but the effect of their attack on herds during warm days in the spring and summer is well known. During the egg-laying period of these flies the cattle are kept in a constant frenzy. Grazing during the warmer parts of the day is

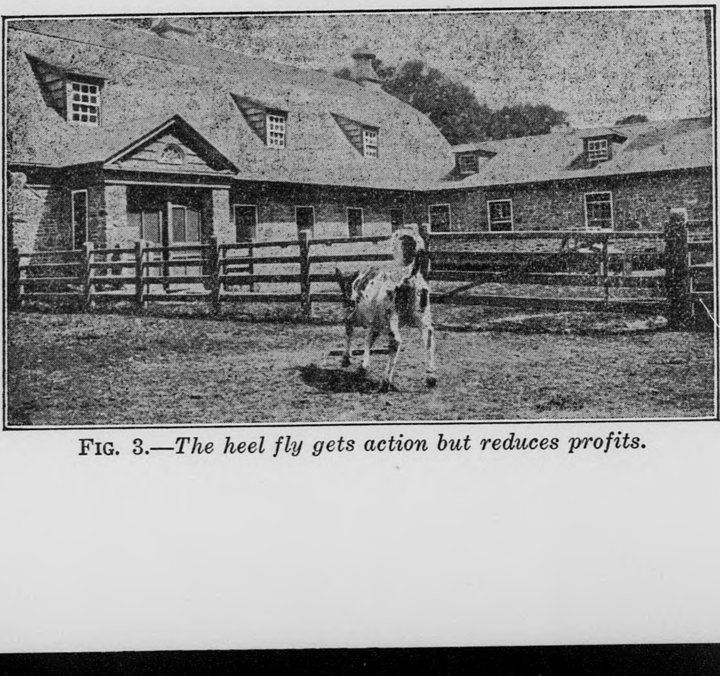

FIG. 3.—*The heel fly gets action but reduces profits.*

stopped, and cattle dash madly from place to place, seeking protection in shade or water. This naturally results in marked reduction in milk flow and flesh condition. The eggs, which are cemented to the hair on the legs or elsewhere on the animals, hatch in from three to five days, and the spiny little maggots penetrate through the skin, causing much irritation. They migrate to the abdominal and chest cavities, where they may be found for the next six or seven months burrowing about on the surface of the digestive organs, and particularly between the mucous lining and the muscular layers of the esophagus. During the late fall, winter and spring they find their way to the back, where each grub makes a hole in the skin. Large swellings appear at these points and later, occasionally, abscesses filled with pus. In these pockets beneath the skin, the grubs grow to maturity in from thirty-five to ninety days and leave the cattle by crawling out through the holes in the skin. On the ground, within their own outer skin, which forms a hard protective covering, they change into flies which are almost immediately ready to repeat the vicious cycle. Cattle slaughtered during the period when the grubs are in their backs are less desirable for beef, and the hides are seriously damaged.

It is possible to attack this pest effectually while it is in the grub stage beneath the skin in the backs of the cattle. The grubs may be pressed out by hand, care being taken not to break the cysts surrounding them, or they may be destroyed by applying certain ointments, washes or powders. The root of the tropical plant called derris, when finely ground, is the most poisonous to these grubs and will not injure the cattle. It may be mixed with vaseline (1 to 10) and applied as an ointment to each grub hole or it may be dusted in the hair on the backs of the cattle or applied as a wash with soap and water (1 lb. derris powder, 1 gal. water and 2 oz. soap). Finely ground tobacco powder containing from 1 to 3 per cent of nicotine also kills a large percentage of the grubs. It should be applied with a shaker can and worked into the grub holes. To accomplish a high degree of control, it is necessary to treat the entire herd,

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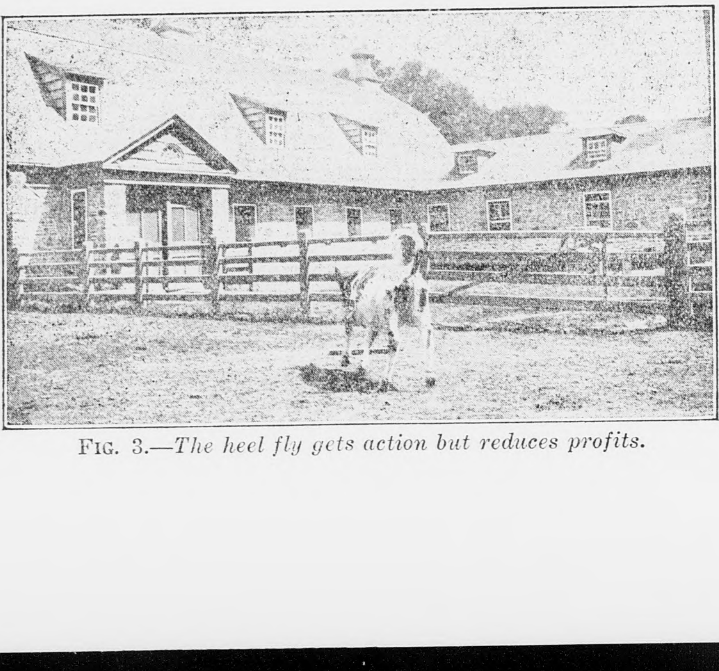

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Horse Bots

Two kinds of horse bots are commonly met with in Maryland, and these may become so abundant as to affect horses and mules seriously. One of these deposits its eggs mostly on the legs, shoulders and neck, while the other lays most of its eggs under the jaws. They reach the stomach of the horse either by being licked off and swallowed or by penetration. About a year after hatching the bots become full-grown, release their hold and pass out of the horse to change into flies approximately a month later. The bots spend several months attached to the walls of the stomach and first section of the intestine. The presence of bots in the stomach in large numbers interferes with digestion and may even cause stoppage of the digestive tract. Heavy infestations result in lowered condition and vitality. In sections of the State where bot flies are abundant, the administration by a veterinarian to the horses of capsules containing carbon disulphide is advisable. This treatment should be given during December or January, before the bots pass backward into the intestinal tract. At the same time that this treatment is administered a wash containing a 2 per cent solution of one of the standard coal-tar creosote disinfectants should be applied on parts of the horse where bot eggs are present. This will destroy the eggs which have not hatched and prevent reinfestation.

Lice

Cattle, horses, and hogs, and, in fact, all domestic animals, suffer at times from the attack of lice. There are two different groups of these insects. Those which attach and suck blood are commonly called blue lice. Lice of the other group move about considerably, feeding on scales from the skin, and are commonly called red lice. The lice found on different kinds of animals are usually different species. For this reason there is little likelihood that lice, even though very abundant, will spread from one kind of an animal to another.

Lice attach their eggs to the hair of the animal, and the young lice, which resemble the parents, hatch during a period of from five to twenty days, depending on the kind of lice and their position on the animal.

Lousy cattle, horses, sheep, hogs, or chickens, can not be expected to do their best, either in growth or production.

There are several different satisfactory methods of combating lice. These consist of applying an insecticide to the infested animals, either as a dust, spray, or dip. The materials best adapted to this purpose are arsenical cattle dip, coal-tar creosote dips, and nicotine sulphate. Dipping live stock in these solutions, if properly done, can be relied upon to destroy the infestation completely, and such practices are usually recommended when comparatively large herds or flocks are dealt with. Usually two or more treatments are required, and the interval between treatments is an important matter, depending upon the kind of lice concerned. It is also necessary to use the dips in the right dilution and to apply them properly. For hog lice, crude petroleum floated on water in a dipping vat or applied to the animals by means of a wallow or by hand gives excellent results. This material is also effective in cleaning up hog mange.

Wood Ticks

In many parts of Maryland, the American dog tick, commonly called the wood tick, is troublesome to livestock. The fact that this tick may also carry dangerous diseases, such as tularemia and Rocky Mountain spotted fever, to man should also be kept in mind.

This tick in its younger stages feeds upon various small wild animals and birds, and this fact makes its control difficult. The mature ticks feed upon domestic animals and the larger wild animals. When fully engorged the females drop off and seek protected places on the ground, where they lay from 4,000 to 6,000 eggs. The seed ticks which hatch from these eggs attach to small wild animals as indicated, become engorged in four or five days, drop off and after a short period of rest, molt their skins and become nymphs. These active little ticks again engorge in a short time, drop off their host, and upon shedding their skins attain maturity.

The presence of underbrush favors the development of the ticks and also protects the small animals upon which they feed. This suggests the importance of clearing away underbrush and destroying small rodents. The mature ticks may be hand-picked or treated with insecticides while on the animals. The same dips recommended for destroying lice are effective in killing the ticks, although usually a somewhat greater strength is necessary.

The information given in this short talk is rather incomplete, but more details may be obtained from your State University or from the United States Department of Agriculture. My purpose is to point out some of the factors which make livestock raising less profitable and to direct your attention to some of the principal ways of controlling these.

QUESTION: Will salt kill ticks?

MR. BISHOPP: No, salt is not very satisfactory.

QUESTION: Will clipping keep flies from bothering cows?

MR. BISHOPP: No.

QUESTION: Would you consider it advisable for a number of men in a locality to cooperate in getting rid of the cattle groub?

MR. BISHOPP: Concerted effort will help, and better results can be secured if farmers club together for the work.

QUESTION: We have two pastures, one for young stock and one for the older animals, and we find that the young stock is more heavily infested with grub than is the old. What is the cause of this?

MR. BISHOPP: Grubs are usually more abundant in young cattle because of less resistance.

PRESIDENT HARVEY: Professor E. S. Good, of Kentucky, who addressed us yesterday morning will speak to us again at this time. Professor Good's subject this morning is "Some Factors in Livestock Management." We have been interested in what he has told us in an earlier session, and I believe that there will be much food for thought in his talk today.

SOME FACTORS IN LIVESTOCK MANAGEMENT

BY E. S. GOOD,

Chairman, Animal Industry Group, University of Kentucky

A good deal of attention is paid to the feeding of our livestock, but feeding is not the only item which enters into successful production of livestock. Management, which means the careful elimination of unnecessary overhead and the use of preventive measures against infectious diseases, are two very essential factors in successful livestock production, and should be given much time and thought.

Over-expansion in equipment is a costly mistake, and keeping more animals than can be handled profitably is another mistake. An example of this was noted in my home state during the time of the World War in the building of extensive and expensive equipment on some farms for the breeding of pure-bred hogs. The farms raising such hogs were also usually overstocked. The upkeep for such equipment was easily met when sows and boars sold for fabulous prices. However, when such prices could no longer be obtained these breeders found that the expense of the overhead could not be met. In fact, I know of one hog barn that cost $12,000 and has not had a hog in it for the past five years. Other men kept this overhead expense down to a minimum, although they had effective housing. For example, I know of one large breeder of pure-bred hogs who had 20 farrowing houses and a few small houses for boars that would not have cost over $30 a house and as far as I could determine he raised just as many hogs as those having the expensive equipment. This man also followed the good practice of weeding out all of his nondescript pigs and feeding them for the commercial market. By this method he had two sources of income: one from his sale of outstanding animals for breeding purposes and one from commercial hogs which were marketed two or three times a year.

One of the largest losses that comes to the breeder of hogs today is from running them on infected ground. In other words, large numbers of hogs are grown on a small area for a long time which causes the soil to harbor different kinds of infection. This means a small pig crop. Such a place studied by the Experiment Station during the past five years show that not 50 per cent of the pigs farrowed are raised. Then, too, pigs put into the feed lot from such premises do not gain as rapidly as do pigs kept on noninfected ground.

Records kept on 72 sows by our swine specialist showed that there was a saving of 1,406 bushels of corn in the growing and fattening of 722 pigs farrowed by these sows after sanitary methods were adopted, compared with the results before sanitary measures were put into operation. There was also a saving of 43 days in the time required to grow and finish the pigs to marketable size as compared with those developed on infected ground. It was found in this investigation that there was some loss among the pigs farrowed under good sanitation. This occurred mostly during the first two weeks of their lives, due to the sows overlying their young. This is prevented by a very successful hog raiser by never allowing the pigs to eat with the sows until they are two weeks old, as he claims it is during this time that most casualties occur.

At the Kentucky Experiment Station we will soon adopt a new system of pork production. We will move off from land which has been used in connection with the growing and feeding of hogs for the past twenty years and raise our hogs on non-infected land. We will endeavor to keep this land free from infection by plowing and the rotation of crops. This, together with other management will, we believe, keep our pigs free from early infection, which reduces the profits in pork production. In brief, our plan will be about as follows: (1) use clean ground—that is, ground that has been plowed since last used for a hog run or ground on which no hogs have run for three years; (2) scald out the hog house before putting the sow in to farrow, application of heat being the only method for destroying the round worm egg; (3) wash the sow with water and soap to remove all dirt that may be contaminated with worm eggs as well as other infectious material; (4) keep the pigs off of infected premises until they are four months old or weigh 100 pounds each.

In my opinion the time has come when the midwest and eastern farmer will resort more and more to the production of beef with the cow-and-calf plan rather than finishing of beeves that have been grown in the West. In my own State I do not know a man who has not made money by that procedure, providing he has used a good pure-bred bull. In the establishment of such a herd a common mistake is made in not testing purchased breeding animals for infectious abortion. Herds are usually tested for tuberculosis but not for abortion. Infectious abortion, however, is about as destructive of profits, if it becomes well established in a herd, as is tuberculosis.

Sheep have always been profitable in Kentucky, and from what I can learn spring lamb production is increasing in Maryland. I understand that you are producing a splendid early market lamb. Due to the drouth the stomach worm made very little headway in our flocks this summer, and as a consequence ewes are going into the winter in much better condition than was thought possible. The dried brown bluegrass we found on analysis was much richer in nutrients than we had thought. It made an excellent sheep feed while it lasted and, considering the anlyses, that is what would be expected. Bluegrass (Sample 1), browned and dried by the drouth, measuring nine inches high, collected the latter part of July analyzed, and young succulent bluegrass (Sample 2) gathered early in the spring analyzed as follows:

	Sample 1	Sample 2
Water	14.51%	78.12%
Ash	5.12	2.8
Protein	10.76	5.39
Nitrogen-free extract	41.38	7.48
Fiber	25.88	4.96
Fat	2.35	1.25

These analyses were made for the speaker by H. D. Spears of the Kentucky Experiment Station. We can see from these analyses that brown bluegrass contained nearly four times as much of the nutrients as did the young succulent grass. The fact that ewes are in good condition at this time may lead to the mistake of allowing them too little feed from now until they go on spring pastures. This would be particularly true if cold weather coupled with snow-covered pastures should continue for a few weeks. When possible, legume hay should be allowed at the rate of 1½ to 2 pounds a day in addition to a grain mixture containing wheat bran and linseed oil meal. A small amount of silage or roots should be allowed for succulence. I am a great believer in growing a small patch of mangels to provide succulence for sheep this time of the year. We have been doing this for the past ten years, although we have in addition corn silage as a source of succulence for our sheep. Sheep should be compelled to take exercise during the winter as in all probability this aids greatly in preventing the so-called "pregnancy disease" in ewes. I know that you are following and recommending the regular drenching of sheep for stomach worms. At the Kentucky Experiment Station we have been able to control this disease by regular treatment although we have been pasturing 100 sheep on 25 acres of land for the past 14 years.

Last, but not least, I believe that the greatest loss through bad management comes from the use of scrub sires. In 1920 we figured that Kentucky was losing $20,000,000.00

annually from the use of too many scrub sires. At that time we began a campaign to eliminate the scrub sire from our State as did many other States, including Maryland, with the result that in 1930 we figure that our loss from this source has been reduced one-half by substituting pure-bred sires for scrub sires. While many of the States, including your State and my State, have made a good start toward eliminating the scrub sire, much still remains to be done along this line.

PRESIDENT HARVEY: The next thing on our program is a Round Table discussion on the general topic "My Most Satisfactory Livestock Experience." Owing to the unavoidable absence of Senator Wolfe, who was to lead the discussion, we shall first hear from Mr. John D. Roop, Jr., of Carroll County.

MY MOST SATISFACTORY LIVESTOCK EXPERIENCE

By JOHN D. ROOP, JR., Carroll County

Mr. President and Gentlemen:

When the Secretary asked me to prepare a paper on the above subject a few weeks ago, I thought it would be quite easy. However, the more I thought, the less certain I was of the experience that had yielded the greatest satisfaction during my forty years, more or less, among stock. It seems that satisfactory experiences, like true friends, are taken for granted, and we soon forget them except as they enter our everyday life.

Unsatisfactory experience like bad dreams continually haunt us. May I recount a few of these to show the difference. A certain man drove into my place in a fine car looking very prosperous. He sold me stock. I made many trips to his place to be sure that all was going well. He assured me that it was, and regularly he sent me a nice check that he said was profits from the stock he was keeping for me. It seemed that that money was much easier than what I got by chasing pigs around through mud on Marble Lawn Farm. His stock did so well that "hayseeds" like me sort of felt unwelcome in his office. Finally, the truth came out. His stock was not his nor mine, and the lawyers who had taken over the receivership of the company are suing to recover some of the nice fat checks that my friend called profits from my stock. I know you are saying that this was not livestock. Well, it ran away.

To recount the experience more or less satisfactory in this or that respect would be dry discourse. I know that you have had satisfactory experiences in pasturing stock that did not run away; in exhibiting stock at fairs or winning other contests; in feeding stock realizing unusually large profits; or hitting the market right in selling or buying or in some way more or less unusual.

My recent experience in feeding wheat instead of corn has been very satisfactory. Do you want my formula for horses, hogs, or milk cows and weaned calves?

Do you believe that material that has been a public nuisance until 1930 has recently been used for feed with satisfactory results? My experience in storing and feeding pomace though an entirely new undertaking in Carroll County was guided by Prof. Merrill's recommendation last summer at the Marketing Conference, when he said that the New England farmers have been using pomace for feed for dairy cows successfully for years. In fact, calves and hogs like this succulent feed too.

PRESIDENT HARVEY: Are there others who have a word to add to this round-table topic? We have some time left and shall be glad to hear from a number of the members present.

MR. W. P. MAGRUDER, Prince George's County: Starting on Tuesday morning looking over the audience, I thought to myself, financially the drouth situation might have taken some of our people. I told my wife before I left home that I guessed I would hear all about the drouth, and I was agreeably surprised. It doesn't seem possible how quickly we can forget things so quickly. I think we are all going to speculate again in 1931. I have great confidence in Mother Earth. I am fond of nature; exercise on the farm is one of the best exercises one can take. Some say to me, "What kind of crops are you going to plant? How much stock are you going to keep?" I say "The same as I did last year." Don't get rid of your stock, it pays. The reason men do not make anything on the farm is because they don't stick to it. The man who sticks to his farming is going to win out. The longer you stick to a thing the more experience you are going to have. I think the Annual Meetings here have meant a great deal to farmers. I have a farm close to the University of Maryland and for the last 30 years it has never been owned by a farmer. When I got it it was just run down and neglected. I bought it and now it is one of the best in the County. I have 100 acres of land that I wouldn't think of selling, it's been very profitable. The best evidence is that I didn't feed a pound of feed to my stock until the first of November because I have plenty of grass. I am proud to say that I do not have to buy any feed. I have plenty of corn and wheat. Our farmers down there are not like farmers of some other Counties, they are getting away from stock. There used to be herds of stock. Some people say they can buy bacon cheaper than they can raise it, but that is a mistake. If you don't have your smoke house you miss a lot of good food and pleasure. I want to wish all you gentlemen a Happy and Prosperous New Year and I hope that this year will be better than 1930.

WM. J. HINES, Montgomery County: One of my best livestock experiences is when I located in Montgomery County instead of Prince George's. One of the experiences that seemed profitable to me was when I entered the Maryland 150-Day 1,500-Pound Litter Contest. The experience of producing market hogs quickly made me some money. This Contest encourages good feeding and management practice.

MR. W. H. CUNNINGHAM, Washington County: I am a Washington County farmer and am proud of it. Our returns this year were nothing to be proud of, but we are still going to stick to it.

The nominating committee was called on by President Harvey for its report. This committee, composed of Messrs. W. P. Magruder, W. H. Cunningham and J. Maguire Mattingly, nominated the following officers who were duly elected:

President—Humphrey D. Wolfe, Glenwood, Howard County.

Vice-President—J. W. Jones, Olney, Montgomery County.

Secretary-Treasurer—B. E. Carmichael, College Park, Prince George's County.

Assistant Secretary-Treasurer—K. A. Clark, College Park, Prince George's County.

Executive Committee—J. Kieffer Funk, Hagerstown, Washington County; E. L. Thomas, Frederick, Frederick County; Ralph T. Wilson, Rising Sun, Cecil County; G. Bernard Fenwick, Glyndon, Baltimore County; H. N. Cohen, Easton, Talbot County.

Director of Farm Bureau Federation—W. R. Harvey, Corbett, Baltimore County.

Delegate to Maryland Farm Bureau Federation—W. S. Chichester, Aquasco, Prince George's County.

ADJOURNMENT.

REPORT

of the

SECOND ANNUAL MEETING

of the

Maryland State Poultry Association

January 7, 1931

The second annual meeting of the Maryland State Poultry Association, in conjunction with the Maryland Agricultural Society-Maryland Farm Bureau Federation, convened at 9.30 A. M., January 7, 1931, with President S. M. Horst, of Maugansville, presiding.

The following educational program was presented:

TEAM WORK IN THE DEVELOPMENT OF MARYLAND'S POULTRY INDUSTRY

BY DR. T. B. SYMONS

Director of Extension Service

University of Maryland, College Park, Md.

Mr. Chairman and Members of the Association:

I appreciate the invitation extended to address this group on the subject assigned. I believe we are all impressed with the tremendous developments that have taken place in the poultry industry in our State during the past five or ten years.

I want to congratulate the Association upon sponsoring and organizing local county associations and the co-operation that it has extended to our Extension folk in arousing our people to appreciate better methods in the raising of poultry and poultry products. You have done a fine piece of work in the conduct of poultry shows. We are pleased with the progress being made in the official certification and pullorum disease testing work that is being conducted in the State in co-operation with our forces.

You will shortly hear from Prof. Roy H. Waite in connection with the experimental work at our Institution and the wonderful work he has done in conducting the Egg Laying Contest.

I have been impressed with Extension activities in the "Grow Healthy Chicks" program and particularly with results of the Farm Egg Record Project that is being conducted with so many progressive poultrymen in the State through our Extension Specialist, Mr. W. H. Rice. It seems to me that this presents a wonderful opportunity, not only to secure additional records, but to show the returns that can be expected in production of eggs when proper methods are followed.

We have made splendid progress in the development of turkey production throughout the State. We have made splendid progress in Boys' and Girls' Poultry Club Work and we are now presented with a wonderful opportunity for the proper marketing of all of these products.

We are pleased with the co-operation from the Bacteriology Department which provides facilities for diagnosing poultry disease outbreaks and which conducts laboratory work in pullorum disease testing and general disease control work. When it is considered that all of these activities are closely allied and the organizations and agencies conducting them are co-operating closely with each other, the average poultryman has at his command the means and facilities for coping with most any problem that may come to him. To avail himself of these advantages requires but the spirit of co-operation, to not only use these facilities, but to support and encourage these organizations and agencies which are benefitting him along with the industry of which he is a part. More whole-hearted co-operation and support is desired, which will increase the service and value of these facilities to you and others engaged in the various phases of the industry.

I am naturally very much interested in perfecting better marketing machinery for our poultry products. Teamwork is desired in this field. I cannot believe that a State that is producing more than twenty million dozens of eggs should not in some way be able to sell them co-operatively and secure greater returns for a great many of the poultry producers who are hardly getting cost of production at the present time.

We have developed an enormous baby chick business during the past ten years. It is not over-estimating, I believe, to say that as many as ten million chicks are produced in Maryland each year. This is an enormous business and I am wondering if we cannot have a little more teamwork in this phase of the industry. Certainly, it seems to me, if we could constantly increase the healthfulness of our chicks, sooner or later we may be able to establish a record for Maryland in the quality of chicks that are hatched.

I have been deeply interested in the turkey industry. Certainly we were presented with a pathetic picture this fall when we learned that forty thousand turkeys were raised in Kent County and none of them were to be sold co-operatively. We have some progressive leaders in the turkey business and some outstanding leaders in this State, such as Mrs. H. M. Baker and others who could be cited. We have endeavored to demonstrate to the turkey producers in that county and elsewhere that we should grade our turkeys and so arrange to market them as to command top prices for our quality product. This presents a wonderful opportunity in co-operative marketing.

We have experienced a severe drought during the past year. Its effects have been felt in the poultry industry. Let me say here that our State Drought Committee, as well as the Federal Department, will undoubtedly be glad to extend such assistance in the way of loans to poultry producers as to others. A fund of money will be available shortly to loan farmers for seed, feed and other necessities for production. I believe the Secretary of Agriculture will give a wide interpretation to the purpose of these loans and am hopeful that any of the poultry producers desiring assistance can secure it.

I should like to appeal to the Association to consider the construction of a five-year program. I believe that if our specialists and leaders in this Association will sit down and analyze conditions, we should be able to construct a progressive program that will mean much to the industry in the years to come.

We do not wish to over-expand the industry for, as you know, unfortunately, there are a great many wrecks in the poultry business. People become enthused with the result of keeping a few hens and feel it can be multiplied by the number of hens they may keep. Other amateurs think that it requires no particular ability to engage in the poultry business and proceed to erect tremendous plants. They then realize the sadness that comes from disappointment in results. We want to grow steadily. We want to improve quality. We want to cut the cost of production and we want to meet the market demands of our territory. Certainly any one looking over the horizon into the future of agriculture in Maryland must realize that our greatest hope lies in producing food for human consumption. This means the gradual development of the dairy industry, the poultry industry, fruits and vegetables and such other crops as will be demanded by the teeming millions that are within our reach. Let us construct a strong, forward-looking five-year program and work co-operatively and industriously toward accomplishing the goals that we set before us.

There is one other point that I wish to bring to your attention, namely, I should appreciate the co-operation of this Association in the gradual development of the adult educational movement. Our rural people are desiring a broader and deeper knowledge of aesthetic and cultural phases of living, as well as factors influencing their business. There is more information available today than ever before. From an educational standpoint, many of our rural adults have not had the opportunity of a high school education, so that from an educational standpoint, an economic standpoint, a social standpoint and psychological standpoint, there is splendid opportunity in the adult educational field. Poultrymen do not always want to discuss poultry when they meet.

I hope that our Service will be in position to send out lecturers in the arts and sciences that will be helpful and inspiring, not only to poultrymen, but to their families. With your co-operation we can seek to develop various phases of adult education that will be an inspiration to our people.

For instance, we should like to encourage rural people to read more books. Eighty per cent of the rural population do not have books available for reading. I am hopeful that we can place technical, as well as general, reading books in our County Agent offices. We should have books on poultry as well as other technical subjects, but at the same time have a general reading library in cultural subjects, arts and sciences that people desire. I should be glad to have your Association indicate the books on poultry that you would like to see distributed for rural reading.

In conclusion, we all realize the tremendous possibilities of this industry. It has been a source of sustenance to many families during the economic depression that has befallen agriculture. It has helped greatly during losses sustained the past year from the drought. It should continue to be a direct source of revenue to most of our rural people. It lends itself to co-operative effort and we should aim to raise the standard of Maryland poultry products and Maryland eggs so that they will command a premium upon our great markets. It should be possible to say that no one could secure a Maryland egg on the market that is not of superfine quality. It will take us a long time to accomplish this, but it should be our goal. We should capitalize upon our geographical position, living in a State that offers every possibility for the development of the industry, and located near to the best markets in the world.

I want you to know that our Extension Service stands ready to work with you in every phase of the industry and I hope and trust that with your co-operation we may be able to serve more efficiently and effectively in the future than in the past.

RESULTS OF RECENT POULTRY EXPERIMENTS AND PRESENT NEEDS OF EXPERIMENTAL WORK AT THE UNIVERSITY OF MARYLAND

SUMMARY OF REMARKS

By ROY H. WAITE
Professor Poultry Husbandry
University of Maryland, College, Park, Md.

Mr. Waite gave some figures bearing on the relationship of size and production in the Leghorn fowl. Leghorn hens that lived throughout a full contest year were grouped according to body weight taken at the conclusion of each of the respective contests. Three thousand four hundred forty-six individuals qualified for this grouping. Four hundred and seven birds weighing less than 3 lbs. averaged 179.79 eggs; 1,064 birds between 3 and 3½ lbs. laid 199.13 eggs; 1,099 between 3½ and 4 lbs. averaged 207.35; 632 between 4 and 4½ lbs. laid 216.08; and 244 weighing 4½ lbs. and over averaged 202.81. As 4½ lbs. is the present Standard weight for a Leghorn hen, Mr. Waite pointed out that this seems to be the proper weight so far as egg reproduction is concerned. The report was based on the results of five annual Maryland Contests, the first of which started on Nov. 1, 1925, the fifth ending Oct. 30, 1930.

With regard to the needs of experimental work, Mr. Waite called attention to the vast amount of detail connected with the conduct of experimental work with chickens and suggested that the crying need at the University Plant is for housing facilities for attendants. He pointed out that it requires at least three years to train a man to care for poultry properly, and to understand the purposes of experimentation, thus making it desirable to hold these men over a period of years to get the benefit of their training and experience. Mr. Waite also listed the qualifications of the efficient caretaker on an experimental plant as follows:

1. A flexible mind.
2. Efficient and loyal.
3. Energetic and ambitious.
4. Neat and orderly.

5. Congenial.
6. Cheerful and pleasant.
7. Of robust health.
8. Intelligent and with fair education.
9. On the job each day.
10. Reasonable degree of permanency.

OPPORTUNITIES FOR CO-OPERATIVE MARKETING OF POULTRY PRODUCTS IN MARYLAND

BY S. B. SHAW

Chief Inspector State Department of Markets
College Park, Maryland

The success of any marketing project depends upon the enthusiasm manifested by the producers and upon their loyal, whole-hearted support of the undertaking.

Conditions in Maryland are somewhat different from other poultry producing sections in that the greatest centers of population are close at hand and so many of our people have the opportunity of reaching this population with the least possible effort and in many instances making direct contacts with consumers.

If our Maryland producers were more distantly located from the large consuming centers the development of co-operative sales organizations and co-operative marketing organizations might be brought about with the least effort. According to a recent bulletin issued jointly by University of Maryland Extension Service and the U. S. Department of Agriculture showing the prices paid for Maryland farm products from 1851-1927, the prices which Maryland poultry producers have received compare favorably with prices received by producers in other sections of the country.

The farm prices for Maryland eggs have been obtained from 1851 to date; farm prices for chickens have been obtained from about 1873 to date; and upon turkeys from 1866 to date. The rise and fall in the farm price of eggs has been very closely followed by the farm price of chickens and turkeys throughout this period. Immediately following the Civil War, the price of chickens and eggs was the highest that it had been since 1851. From this time to about 1897 prices fluctuated up and down with the price of eggs maintaining a higher level than did the price of either chickens or turkeys. From 1897 the price level of all three products gradually advanced with certain seasonal declines until between 1914 and 1915 when the price level of all three products sharply advanced until 1920 when they reached their highest level. From 1920-1922 there was a sharp decline in the farm price of eggs and chickens but the farm price of turkeys did not decline until about 1923-1924. From 1922-1925 there was a slight advance in the farm price of chickens and eggs, but the farm price of turkeys did not go up until after 1926. Prices for the three commodities from 1927 to date show some variation and they bear the same comparative relation to each other that was manifested between the periods of 1887-1920.

Even though the Maryland farm price of chickens, eggs and turkeys has gone decidedly below the high levels reached in 1920, the present low level with the exception of the price of eggs has not been below the former peak prices obtained from 1865-1915.

During the past few years a comparison of these price trends seems to indicate that perhaps efforts which have been put forth by various agencies to stimulate egg production had the effect of lowering the price of eggs, particularly, when that price is compared to the price of chickens. One might interpret these figures to mean that as a result of stimulation in egg production more farm flocks are made up of egg producing types of chickens. Formerly, it seemed to be the general practice for the ordinary farm flock to be made up of birds that not only produced eggs but also afforded a meat supply. The more recent stimulation of egg production has changed conditions to the extent that for general purposes the types of birds heretofore found in most farm flocks have been supplemented by the highly efficient egg producer with the result that the level of farm prices of eggs is below the level of the price of chickens.

A comparison of farm prices of dairy products shows very much the same condition with respect to advances and declines as has occurred with poultry products. A close analysis, however, of the Maryland farm price of milk when compared with the retail price of milk in the City of Baltimore seems to indicate that since the organization of the Maryland dairymen to sell their milk co-operatively the average farm price of Maryland milk up to 1930 has been slightly on the incline, while the price which the consumer paid for this same milk in Baltimore has remained at practically the same level. This could be taken to mean that producers of this product have been able through their organized effort to place on the market a more highly standardized product, thereby securing for themselves a better price without raising the price to the consumer. If this is true with a product like milk, the same could be true in the selling of poultry products.

Many instances have been brought to our attention where individual producers of poultry products have been able to put on the market quality which brings the price far in excess of the general price level. This year with the turkey market situation being such as it has been, the general price level being considerably lower than for the past several years, a number of Maryland turkey producers have been able to secure for their product prices well above the general level. This condition has been made possible because the producers have continued to offer products of superior quality which have become standardized and which makes an appeal to the person who is willing to pay for quality products. If it has been possible for individual producers of this kind to develop markets of such a character it would be equally possible for a group of producers to obtain similar results through their co-operative effort and by so doing permit a wider distribution, a more profitable sale, and a larger volume of their products.

No attempt will be made at this time to enter into the details of the development or the working out of co-operative projects, but suffice to say, the Extension Service of the University is willing at all times to assist any individual or group of individuals in developing co-operative organization for the outlet of their products. The place to begin any co-operative undertaking is with a small unit in the local community. One or two neighboring producers may form a nucleus of a co-operative association, and it is only when co-operatives are built on this principle by starting on the ground floor with a small group that can feel their way and expand and develop as the demand increases that the really successful co-operative association can ever hope to be developed.

THE FIRST YEAR'S RESULTS IN THE MARYLAND FARM EGG RECORD PROJECT

BY W. H. RICE

Extension Poultry Husbandman,

University of Maryland,

College Park, Maryland

This phase of poultry extension work was inaugurated November 1, 1929, and is designed to secure and make available to poultrymen and others economic information concerning the production of eggs in Maryland. Information on this subject is very limited and it is felt that this work will make information available that will be of great value to poultrymen and agricultural workers in dealing with problems of the industry.

Calendars consisting of thirteen pages were printed and distributed to about 250 poultry raisers for the first year. On the front of each calendar page information of a timely nature is given, along with a space for keeping a record of daily egg production for the month. At the bottom of the page a detachable card is provided, which is to be mailed at the end of each month to the Extension Service, College Park. On this card is given the number of birds in the flock, number eggs produced, and number of birds died and sold during the month.

On the back of each page is given a form for entering costs, receipts, inventories, etc., to cover the year's operation of the poultry business.

The monthly cards are summarized each month and these summaries sent to each reporter and other interested persons.

A summary of the first year of this work which gives for the first time information of this character on Maryland poultry conditions follows.

FIRST ANNUAL FARM EGG RECORD PROJECT

Yearly Summary Report

Calendar Year Nov. 1, 1929, to Oct. 31, 1930

Average number of farms reporting	111
Average number of birds represented	44,353
Average number birds per farm	400
Average eggs per pullet	148.43
Average eggs per hen	122.17
Average eggs for pullets and hens (mixed flocks)	137.16
Average eggs per bird all flocks	139.61

Flocks Classified According to Size

	Backyard Flocks (Less than 100 birds)	Farm Flocks (100-499 birds)	Commercial Flocks (Over 500)
Av. No. eggs per pullet	171.32	146.78	148.64
Av No. eggs per hen	144.37	119.40	115.03
Av. No. eggs per bird (Mixed flocks)	126.66	133.14	144.08

High and Low Flocks for Year

	HIGH FLOCKS		LOW FLOCKS	
KIND OF FLOCKS	Average No. Birds	Average No. Eggs Per Bird	Average No. Birds	Average No. Eggs Per Bird
Pullet flocks (less than 100)	65	248.34	61	77.57
Hen flocks (less than 100)	59	183.56	54	69.33
*Mixed flocks (less than 100)	72	194.89	60	59.52
Pullet flocks (100-499)	191	235.93	244	41.92
Hen flocks (100-499)	213	177.86	232	44.76
*Mixed flocks (100-499)	289	214.42	169	37.18
Pullet flocks (500 and over)	769	200.51	1,544	82.51
Hen flocks (500 and over)	742	148.51	565	80.88
*Mixed flocks (500 and over)	802	160.39	898	106.64

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* Mixed flocks are flocks of hens and pullets running together.

The above tables show the average number of birds in the highest and lowest flocks as well as the total production of these flocks summarized from the monthly reports for the year. While the figures are computations and, therefore, hypothetical, they may nevertheless prove interesting. While they do not represent any particular flocks, the number of birds is the average number of birds in the highest and lowest flocks, and the production is the sum total of the production of the highest and lowest flocks reported in each of the twelve monthly summary reports.

The year's standard production for pullets is 184 eggs per pullet. The average of the pullets reported for the year is 148.64 eggs or 35.36 eggs per pullet below the standard production, which is based on the average production of the pullets in the Maryland State Egg Laying Contest for the first three years of the Contest.

Percentage of Layers Died and Sold

	Pullets		Hens		Mixed Flocks	
	% Died	% Sold	% Died	% Sold	% Died	% Sold
For the year	16.93	43.79	12.59	53.32	15.83	47.43

The above figures are the sums of mortality and culling from the monthly reports for the year.

YEAR'S SUMMARY REPORT COVERING FARMS MAKING COMPLETE REPORTS DURING CALENDAR YEAR NOV. 1, 1929, TO OCT. 31, 1930

Number farms reporting for 12 months	39
Number birds to start year on these farms	22,048
Number birds to end year on these farms	9,847
Average number of birds for the year	15,961
Average number birds per farm for the year	409
Average eggs per pullet based on average number of birds for year	161
Average eggs per pullet based on number birds to start year	116
Average eggs per hen based on average hens for the year	144
Average eggs per hen based on number birds to start year	104
Average eggs per bird (mixed flocks) based on average number birds for year	156
Average eggs per bird (mixed flocks) based on number to start year	113
Average eggs per bird (all flocks) based on average number birds for year	155
Average eggs per bird (all flocks) based on number birds to start year	112

Flocks Classified According to Size

	Backyard Flocks (Less than 100 birds)	Farm Flocks (100-499 birds)	Commercial Flocks (Over 500)
Av. No. eggs per pullet...	145	171	153
Av. No. eggs per hen.........	129	145	143
Av. No. eggs per bird (mixed flock)...........	None Completing	140	163

High and Low Flocks for the Year

Kind of Flocks	High Flocks No. Birds Start	High Flocks No. Birds End	Ave. No. Eggs Per Bird	Low Flocks No. Birds Start	Low Flocks No. Birds End	Ave. No. Eggs Per Bird
Pullet flocks (less than 100)......	18	15	198	95	55	133
Hen flocks (less than 100)......	65	30	138	65	10	114
*Mixed flocks (less than 100)......			None completing			
Pullet flocks (100-499)	411	177	256	463	286	103
Hen flocks (100-499)	275	41	173	345	203	122
*Mixed flocks (100-499)	250	56	227	348	115	86
Pullet flocks (500 and over)......	553	76	191	900	270	129
Hen flocks (500 and over)......	625	300	160	600	339	130
*Mixed flocks (500 and over)......	1000	500	185	900	206	126

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* Mixed flocks are flocks of hens and pullets running together.

The above tables show the production of the highest and lowest flocks in the three divisions as reported for the full calendar year, November 1, 1929, to October 31, 1930. Checking your averages against these shows about where your flock stands in the year's production with the highest and lowest in the project.

The year's Standard Production is 184 eggs per pullet. The average of the pullets reported for the full year is 161 eggs or 23 eggs below the standard production, which is based on the average production of the pullets in the Maryland State Egg Laying Contest for the first three years of the Contest.

Percentage of Layers Died and Sold

	Pullets		Hens		Mixed Flocks	
	% Died	% Sold	% Died	% Sold	% Died	% Sold
For the Year	18.3	38.2	14.6	38.7	15.3	41.6

Time to Check Up

A comparison of the two summaries is not only interesting but also provides material for indications of great pertinence to poultrymen. It should be borne in mind that the figures from the thirty-nine farms in the latter tables also enter into the former tables along with figures from the farms whose year's records are incomplete. Even in this case, a comparison of the averages reveal the following indications in favor of keeping complete records:

1. A higher average egg production per bird, 161 against 148 for pullets, 144 against 122 for hens, 156 against 137 for mixed flocks and 155 against 139 for all birds in these cases.

2. Mortality in these cases is practically the same, the difference being in favor of the former records except on mixed flocks. It is probable, however, that the difference is explained in carelessness in failing to keep account of birds died in the case of incomplete reports, as differences should, and probably will in the long run favor complete records.

3. Percentage of birds culled, consistently lower in favor of the complete records, while production per bird is consistently higher.

Why this difference? The next time you feel like expressing your dislike at keeping records, bear in mind—MORE EGGS PER BIRD, LOWER MORTALITY, LOWER PERCENTAGE OF BIRDS CULLED FOR THE YEAR. THINK IT OVER!

A study of the mortality and culling statistics shows that nearly one-half the birds that started the year were lost through culling and nearly one-seventh through death. This means that nearly sixty per cent of the flocks must be replaced if the same number of birds are to be carried next year. Replacing sixty per cent of the flock is expensive business. While nearly fifty of this sixty per cent is from culling, this is a higher percentage of culls than should be necessary to secure the production reported. Culling is always good business when there are culls in the flocks and in most instances more rigid culling would be profitable, but even so, this does not necessarily reduce the percentage of loss through culling.

Then what is the solution? There probably is no complete solution since there will always be some mortality, and judicious culling will always be profitable. How to reduce mortality and the percentage of birds necessary to cull. A "four fisted" attack.

1. Pedigreed males from high record hens.
2. Grow pullets the "Grow Healthy Chicks" way.
3. Use double yarding system to all laying houses. Yards used by birds only in alternate years.
4. Keep complete records. Some regard them as a necessary evil; others, a thing to be avoided, while the most successful have learned to like them because they have found they are "worth their weight in gold."

REMEMBER: *Health of the birds is the foundation of successful poultry husbandry.*

RESUME OF POULTRY CERTIFICATION AND PULLORUM DISEASE TESTING IN MARYLAND IN 1930

BY PAUL A. RAPER

Assistant Specialist in Poultry Marketing

University of Maryland, College Park, Md.

Mr. President, Ladies and Gentlemen:

As it is now time for the next speaker on the program, I will summarize briefly the accomplishments in poultry certification and Official Pullorum Disease testing in Maryland.

In order that you may have a picture of what has been done along the line of poultry improvement in this State, I wish to summarize the certification work for the past three years, namely, 1928, 1929 and 1930. The accompanying table shows the total number of birds examined for each of these three years, total number of certified birds, the per cent of birds examined that were certified, the number of birds given the blood test for Pullorum Disease (Bacillary White Diarrhea), number of counties having one or more certified flocks, and the number of flocks certified.

	1928	1929	1930
Number Examined	17,000	22,083	26,094
Number Certified	12,000	16,365	19,813
Percent certified	71	74.1	75.93
Blood tested	951	3,304	6,739
Number Counties	9	10	11
Number Flocks	53	82	95

There has been a consistent increase in the number of birds submitted for inspection, increasing at the rate of about 4,000 birds each year and the number of birds that were certified increased at the rate of nearly 4,000 birds. The increase in number of birds certified was not as large as that of the previous year; however, the quality of the birds examined was much better, even though we have had a dry summer and very little, if any, green feed to feed the growing stock.

The largest increase has been in blood testing. Twice as many birds were given one blood test for Pullorum Disease as were tested last year. There were 1,171 birds of the 6,739 tested that gave a positive reaction to the test or slightly less than 18 per cent. At this time there is still aproximately 2,000 birds to be blood tested.

There is no doubt in my mind that this work is just as beneficial to the poultrymen, who are taking an active interest in poultry improvement, as any other work now being done in the poultry field. The "Grow Healthy Chicks" work for 1930 carried on by our Poultry Specialist, Mr. W. H. Rice, shows that there were 4.69 per cent less chicks lost until pullets were housed, where all of the recommendations were followed. The eight practices recommended are as follows:

1—Clean Chicks, which means chicks from certified and blood tested flocks.
2—Clean Incubator.
3—Clean Brooder House.
4—Clean Ground.
5—Clean Litter.
6—Clean Feed.
7—Clean Management.
8—Clean Laying House.

The "Grow Healthy Chicks" Summary for 1930 is shown in the following table:

"Grow Healthy Chicks" Summary
1930

"Grow Healthy Chicks" Practices Followed	No. Farms	No. Chicks to Start	Chicks Lost Until Pullets Were Housed		Chicks Culled and Sold		Chicks Housed as Pullets	
			Number	% Lost	Number	% Sold	Number	% Housed
Followed all 8 practices	24	15,296	1,455	9.51	7,224	47.23	6,617	43.26
Followed all except No. 1—Clean chicks	36	45,204	6,420	14.20	21,935	48.53	16,849	37.27
Followed all except No. 4—Fresh ground	9	8,701	914	10.50	4,414	50.73	3,373	38.77
Did not follow No. 1—Clean chicks No. 2—Clean incubators	7	6,775	1,246	18.39	3,195	47.17	2,334	34.45
Did not follow No. 1—Clean chicks No. 4—Fresh ground	51	57,430	9,928	17.29	26,885	46.81	20,617	35.90
Did not follow two practices. Miscellaneous	13	10,359	1,691	16.32	5,003	48.30	3,665	35.38
Did not follow three or more practices	25	20,760	4,562	21.97	8,827	42.52	7,371	35.51
Totals	162	164,525	26,216	15.94	77,483	47.09	60,826	36.97

The certification and official Pullorum Disease Testing for 1930 centered in the following counties: Caroline, Talbot, Dorchester, Washington and Montgomery. It is my sincere hope that we may have a number of certified flocks in Baltimore, Howard, Carroll and Harford Counties for the 1931 breeding season.

The lack of good breeding males has been very obvious in poultry improvement work. There is a much desired need for R. O. P. work in the State. The use of good R. O. P. males in our certified flocks would do much toward improving our Maryland poultry.

We had hoped that the 1931 certified breeders' list would be here today, but as yet we have not received them. However, you will be mailed a copy in the near future.

I thank you.

THE CERTIFICATION AND B. W. D. TESTING OF POULTRY FLOCKS AS DEVELOPED IN CAROLINE COUNTY, MARYLAND

BY T. D. HOLDER

County Agent, Denton, Maryland

During the past three years Caroline County has led the State by having the greatest number of birds certified for breeding purposes. Statistics show that in—

1928—6099 birds were certified
1929—6041 birds were certified
1930—6767 birds were certified

It may be stated that in 1929 Caroline had approximately one-third of the total number of birds which were certified in the State. The development of certification work in this county has been due largely to the efforts of our local hatcherymen co-operating with poultry raisers. Increased demands for better quality chicks or chicks which have been certified by the Maryland State Poultry Association have been largely responsible for the interest in this work. Flock certification or the selection and approval of birds as being superior in quality and desirable for breeding purposes has been ably handled by the above Association. It can be truthfully stated that a general improvement in poultry flocks throughout the county is apparent where certification has been practiced.

Regarding the B. W. D. testing, we have had but few flocks tested during the past two years. Observations made on the results of this work seem to be satisfactory; however, the present cost of certification work in Maryland as compared to other states is a factor which discourages our hatcherymen and poultry raisers from doing more of this work.

Following the educational program the election of officers and business meeting took place. Results of the election were as follows: Mr. S. M. Horst, Maugansville, President; Mr. W. D. Pickering, Denton, Vice-President; Mr. Aaron Fell, Bethesda, Secretary-Treasurer. Directors: Charles F. Hines, Olney, Maryland, to succeed F. E. Williar, Mt. Airy, his term having expired. Mr. John E. Evering, Stemmers Run, to succeed Mr. Frank M. Payne, Frederick, who resigned to accept the position as Secretary of the Maryland Farm Bureau Federation.

A committee was appointed to draw up a resolution regarding the affiliation of county associations with the Maryland State Poultry Association, the fee not to exceed $10.00.

Committee:

F. E. Williar, Chairman
Charles F. Hines
J. E. Evering

The resolution approved and passed by the Directors of the Association in session is as follows:

"Resolved that the Directors of the Maryland State Poultry Association be empowered to admit as associate members, County Poultry Organizations. The annual membership fee shall be $5.00. Each county organization so affiliated is granted the privilege of sending one delegate to any of the State Association meetings. The State Association in turn is to be expected to help organize County units throughout the State and co-operate in making their undertakings successful."

The meeting adjourned 12.30 P. M.

FIRST MARYLAND POULTRY PRODUCTS SHOW

Much interest was shown by visiting poultrymen and farmers in the first Maryland Poultry Products Show, held from January 6 to 9, in conjunction with the annual meetings of the Maryland Agricultural Society-Maryland Farm Bureau Federation and allied organizations.

The exhibit and contest which were staged at the Lord Baltimore Hotel, Baltimore, the headquarters for the farm meetings, were put on for the purpose of stimulating interest in production, standardization, marketing and consumption of superior quality Maryland poultry and poultry products.

The exhibition was purely educational and was conducted in the interest of producers, consumers, and dealers alike. The object was to award recognition and give publicity to those poultry products produced, marketed and consumed in the State, which exemplify in the highest degree those factors which are known to determine quality, furnish satisfaction and economy, and are consistent with the standards of production and living that should exist in Maryland.

Entries were made in the three following departments:

Eggs—

Class	I.	Certified Class (Brown)
		Certified Class (White)
Class	II.	Bonded Hatchery Class
Class	III.	Record Flock Class (White)
		Record Flock Class (Brown)
Class	IV.	Producers Class (White)
		Producers Class (Brown)
Class	V.	Commercial Class

Baby Chicks—

Class	I.	Barred Plymouth Rocks
Class	II.	White Wyandottes
Class	III.	Rhode Island Reds
Class	IV.	White Leghorns
Class	V.	Miscellaneous

Dressed Poultry—

Class	I.	Turkey Hen

There were other classes in which no entries were made so they are not being mentioned.

A silver sugar bowl awarded for the best dozen eggs in the first four classes in the Egg Department was won by Mrs. Harvey Quillen, of Preston, and a loving cup for the best entry in the Commercial Class was won by Schluderberg-Kurdle Company, of Baltimore.

Mr. Charles Hines, of Olney, was awarded a silver tray for the best entry of baby chicks which consisted of twenty-five Rhode Island Red chicks.

REPORT

of the

ANNUAL MEETING

of the

Maryland Tobacco Growers' Association

January 8, 1931

BALTIMORE, MARYLAND

A meeting of the Maryland Tobacco Growers' Association was held with the Maryland Farm Bureau Federation at the Lord Baltimore Hotel in Baltimore on January 8th, 1931.

Hon. Thos. Parran, President of the Maryland Tobacco Growers' Association, stated that the Association is now in the strongest position that it has been in since its organization, and that the people of Southern Maryland realize how essential it is to have an organization to uphold the prices of Maryland tobacco. He further brought to the attention of the tobacco growers that the Maryland tobacco market was the only market handling farm products that did not go to pieces in 1930, and, in fact, the price of tobacco grown in Maryland strengthened as the year progressed.

He then called on Mr. J. C. Brown, Manager of the Maryland Tobacco Growers' Association, to introduce the speakers, and Dr. F. B. Bomberger, now associated with the Federal Farm Board, was then called on for an address.

Dr. Bomberger said that the success of Southern Maryland depended on the success of the Maryland Tobacco Growers' Association. He then confirmed Mr. Parran's statement that the Maryland tobacco market was as good or better in 1930 than in 1929. He then called to attention the fact that until late last year Maryland had the only tobacco organization in the United States, and that it was no accident that Maryland prices were better for tobacco in 1930 than in 1929 and it was due to the efforts of those in the organization that the price on Maryland tobacco was the only one that was maintained in the United States.

Dr. Bomberger read a report on different types of tobacco which included types No. 21 of North Carolina which sold for 19c a pound in 1929, and 14c a pound in 1930; type No. 23 of Kentucky sold for 13c in 1929 against 9¼c in 1930; type No. 31 of Tennessee sold for 24½c in 1929 against 20¾c in 1930. He also stated that not only were the prices of the above mentioned tobacco markets very much lower in 1930 than in 1929, but that all of these averages were far below the average prices of Maryland tobacco, and that if the Maryland Tobacco Growers' Association received a larger quantity of tobacco from Southern Maryland the good results would be vastly improved.

Dr. Bomberger stated that organization is increasing, and that its necessity is being recognized by the farmers. He stated that the increased business of the Maryland Tobacco Growers' Association was one of the greatest causes for the United States Government consenting to aid the organization with an advance through the Federal Farm Board, and the fact that the Federal Farm Board passed this advance is a great compliment to the organization that it could meet with the requirements of the Federal Government, which is very particular about putting out its money.

Since 1925 there were more than 12,000 business organizations in the United States handling more than $2,500,000,000 worth of business, or more than 20% of the total value of farm products. He stated that the 6,000,000 farmers as individuals without organization are competitors to each other.

He read a part of the Act which stated that the Federal Farm Board was created to restore the agricultural industry to a parity with other business by organization of farmer-owned and farmer-controlled co-operative associations, and the Act further states that there should be an elimination of sales competition.

Dr. Bomberger stated that on the Eastern Shore, when he was connected with the greatest potato selling organization in the world, he had seen as much as a $1.00 drop per barrel a day, because the commission men on the outside market sold potatoes at whatever price they could get in order to get their commission, and with 100,000 barrels of potatoes coming in per day, the farmers were losing $100,000 daily because of the competition in selling by the commission men on the outside market, as they did not know the value of the commodity, not having the information that the organization had, but each got the price that the other sold the potatoes for instead of getting a fair value for the product.

He stated that the fact that farmers had for years and years shipped to certain commission merchants on the market is no reason that they should continue to make the same mistake now that they have their own organizations to handle their business, and that organization was not magic that would bring about high prices immediately, but would produce good results gradually but surely.

After going into some statistics he showed that there could be no over-production of Maryland tobacco as the market could always absorb more tobacco than the Maryland farmer could ever produce, and that you could not judge the value of an organization by the prices of the commodity as foreign and local conditions entered into the price, but regardless of what the price is, it would certainly be much lower if it were not for organization.

He stated that no one can help a group of farmers that will not help themselves, but that the Federal Farm Board was willing and anxious to help the farmer if he would cooperate. He stated that the people that buy the farm products to use are favoring organization; so if there should be a decline in prices the market would go down gradually so that they would not have to be speculators instead of manufacturers. The farmer cannot expect the Government or their organizations to solve their problems, but these problems can be solved by themselves with the aid offered by the Government and their own organizations.

Mr. Brown then introduced Mr. George I. Gardiner, Executive Vice-President of the Maryland Tobacco Growers' Association, as the next speaker. Mr. Gardiner stated that the great progress and maintenance of price of Maryland tobacco in 1930 would never have come about without the assistance of the Federal Farm Board which made advances to the Association with which to finance its members. He confirmed the statement made by Dr. Bomberger that the Federal Farm Board was very exacting in the general set-up of organization when making advances, but the Maryland Tobacco Growers' Association qualified, and it should be gratifying to the people to know that we have an organization that can meet the strict requirements of the Federal Government.

Mr. Gardiner said that if there ever was a year that had its trials and troubles it was 1930, as there were many obstacles that arose during that year in selling the Maryland crop of tobacco at a price that was fair to the farmer as the Maryland Tobacco Growers' Association was not only faced with the competition of other markets selling lower but had the competition of the Southern and Western markets giving the tobacco away. He stated that the early price established on the Maryland market was the average of April, but in opposition to this the Association carried over six hundred hogsheads of tobacco from April to June, and though the crop was very heavy and did not burn well, and was off color as to regular Maryland grades, and though the Association was faced with the markets that closed ahead of the Maryland market at very much lower prices, we were fortified with the belief that enough tobacco had come to the Association to permit it to maintain a living price. Mr. Gardiner stated that the Maryland crop sold for less in 1930 than it might have sold for, but it was sold for as much as the tobacco growers of Southern Maryland would allow it to bring.

From June 10th to July 12th, 1930, we had a good market, but after this time a decline set in and when the

Maryland Tobacco Growers' Association rejected the tobacco the buyers came to the Association and stated that tobacco was being sold on the outside market at the prices they were bidding, but these same prices were being rejected by the Association. When the buyers asked why the tobacco was being rejected Mr. Gardiner asked the buyers why tobacco could not be sold at the price it had sold a week before, to which the buyers answered that we should look at the price of wheat, cotton and other farm commodities, and see if we were not getting too much for Maryland tobacco. Mr. Gardiner stated that this had nothing whatever to do with the matter, as Maryland tobacco was really selling, and had always sold too close to the cost of Maryland production. From July to August the Association accumulated 2,600 hogsheads of tobacco which stabilized the market, and every hogshead sold in the meantime was sold based on the market established between June and July. In December the stock of tobacco in the hands of the Association was sold at fair and satisfactory prices at the same price that had been established.

Mr. Gardiner produced statistics which showed that in 1930, 130,000,000,000 cigarettes were manufactured, and that now is the time to buy land in Southern Maryland, and that Maryland should increase its production of tobacco, as we are not growing enough tobacco to put on the market to bring in the competition we should have, and the price of land is governed by the price of the product grown in the land.

Tobacco consumption is on the increase, as prior to 1914 only 5% of the tobacco grown in the United States went to produce 16,870,000 cigarettes, but in 1926 37.6% went in cigarettes, but this year we will have over 130,000,000,000 which is almost 800 cigarettes produced now for each one produced in 1914.

All the farmer has to do in order to bring about the desired and justified result is to be a true and loyal member of the Maryland Tobacco Growers' Association and to give his support to it by honest co-operation. The discouraging thing to those trying to handle your problems is that after all the results accomplished this year, the Association only sold about 50% of the Maryland crop in 1930.

Mr. E. G. Jenkins, who is head of the 4-H Club in Southern Maryland, was then introduced. Mr. Jenkins thanked the people of Southern Maryland and the Maryland Tobacco Growers' Association for the support given the 4-H Club this year, which has greatly helped to increase its membership. He stated that the work in tobacco should be increased several hundred per cent by the members of his club, as it was surprising to know the amount of money the boys had made in tobacco through their club work, some of which amounted to $400.00 a season per boy.

The winners of the club were Lee Suit, of Prince George's County; Ninian Beall, of Anne Arundel County; Lawrence Harrison, of Calvert County, who did not attend the meeting; John Lyon, of Charles County, and Pinkney Barber, of St. Mary's County. The Maryland Tobacco Growers' Association had invited all of these winners as its guests to take a trip to Baltimore, and attend the meeting and the banquet of the Maryland Farm Bureau Federation.

A report of the Association's activities for 1930 were read and the meeting was then called to a close.

REPORT

of the

Home and Community Committee Meeting

MARYLAND FARM BUREAU FEDERATION

January 8, 1931

MRS. M. MELVIN STEWART, Secretary

The eighth annual meeting of the Home and Community Committee of the Maryland Farm Bureau Federation was called to order at 10 A. M. on Thursday, January 8, 1931, by Mrs. Harry T. Williams, Chairman. After prayer, the group sang the new song, "American Farm Bureau Spirit".

Mrs. Melvin Stewart, the Secretary, read the minutes of the last meeting, which were approved.

Mr. Paul T. Beisser, General Secretary of the Henry Watson Children's Aid Society, the first speaker, said there was certainly some connection between his work and Farm Bureau work. 'The Aid Society is now taking care of 443 children—some of whom are bad. If a child has energy enough to be bad, he also has energy for doing worth-while things. There are no natural born criminals. Lots of things that children do are not wrong, but the reaction on you is unpleasant and you have made it a home crime. A boy chooses to play baseball, but some community may say it is a crime. Many things not criminal have been made so by enactment. The reformatory may be likened to a high school; and the jail, house of correction or penitentiary to college. At a reform school one may be sure that all is learned that those there can teach. Bad people are just as anxious to teach what they know as good people are.

Instead of starting with the commission of the crime, we should think in terms of the kind of guidance every individual should have to produce a satisfactory life instead of a criminal. Your job as parents is to prevent crime by home training. Grand-parents and parents are the ones to prevent crime.

The Henry Watson Children's Aid Society is one of the 34 member agencies of the Community Fund and places destitute or friendless children in homes where they may receive the proper care. The Society dates from 1860, when several prominent Baltimoreans, interested in prison reform work, found that many small childen were committed to jail for petty offenses and consequently developed into hardened criminals. It is said that at this period, due to the agitation produced by the Civil War, children wandered alone through the streets, sleeping in doorways and stables and begging for a living. During the first 50 years the Society served the needs of 8,290 children. Of this number, 4,082 were placed in family homes, where most have grown up into substantial citizens; 4,262 were assisted in their own homes or in the homes of relatives. During the last year the Society has provided food, clothing and shelter for 620 children.

Miss Venia M. Kellar, State Home Demonstration Agent, was called on to introduce Dr. Louise Stanley, Chief of the Bureau of Home Economics of the U. S. Department of Agriculture, who spoke on the recent "White House Conference on Children," called by President Hoover. Dr. Stanley said she preferred to speak on the relation of the White House Conference to the Rural Home.

"We all," Dr. Stanley said, "felt that we got out of this Conference, with its contacts with people from every section, much more than we put into it. There have been two previous Conferences called in the interest of children, the Roosevelt Conference in 1909, which culminated in the organization of the Children's Bureau in the Department of Labor, and the Conference of 1919 during Wilson's administration, which was conducted under the auspices of the Children's Bureau.

At this recent Hoover Conference the work was taken up in four divisions: Medical Service, Public Health, Education, and Handicapped Children. There was a particular effort made to get all information available on rural conditions affecting children.

"The Children's Charter" is a boiling down of the recommendations of all the Divisions of the Conference. You rural people are in the best position to know how to coordinate these services of Federal and State agencies, and whether they are overlapping, and which of them are most important.

School and health and recreational facilities equal to the city child's should always be provided for country children. It was reported that the parents of rural children do not take as much interest in the recreational facilities provided for their children as do the parents of city children. There should be for every child a dwelling place, safe, sanitary and wholesome, with an environment harmonious and enriching. It isn't enough that there should be just convenience, but beauty and a satisfying life are the birth-right of children.

The family of the country districts are more stable. The criticism was made that the rural families didn't seem to be doing things together. There seemed a need for more types of family recreation."

Dr. Stanley said she hoped that we women of the great American Farm Bureau would start some project—as housing, for instance—more with the idea of developing a satisfactory home life. Home making is not household management.

She stressed the fact that we should give more thought to the recreation of the family as a whole. "The boys and girls of a family should be expected to make their contribution to knitting the family closer together. Always the family does most in the education of the child, so social and economic movements must be adjusted to the family."

Miss Helen Schellenger, of Kent, was next introduced to put on a recreation stunt. Miss Schellenger spoke of her Philosophy of Rural Education. "Why do we get tired?

Our own company palls on us," she said. "Every program should have some time devoted to recreation. Real play opens the valves of joy in the soul, flushes the system of its work-poisons, sets hope on a pinnacle again, revives self-respect, restores tolerance of other people, puts zest into living."

She then proceeded to put her theory into practice, and had a dozen women busily untying knots while the others, keenly interested, watched and cheered the winning side.

Mrs. Charles W. Sewell, Director of the Home and Community Department of the American Farm Bureau Federation, who is beloved by all Farm Bureau folks, was next introduced. Busy farm wife and mother, who has found time to serve her community, her county, her State, and finally, her nation, Mrs. Sewell has so endeared herself to the farm group of the country that her coming is always a great event. A gifted speaker, sincere and earnest and with a boundless optimism which knows no defeat, she always leaves her hearers strengthened to meet their problems, whether they are individual, community or State-wide.

Mrs. Sewell said: "I bring you greetings from eighteen hundred County Farm Bureaus. In your community and in your homes will the history of the great American Farm Bureau Federation be written. There are lots of others helping you. Optimism and cheerfulness are the woman's part in the fight. She must be the cheer leader for the home in these darker days which have come to agriculture. Our job is to strengthen and support our men folks each day as they go forth to battle. We must keep informed on the business, legislative and economic questions which confront farmers. Remember the slogan of our group: 'An Organization whose purpose it is to interest and inform and enlist every farm family to the end that there may be a happy and prosperous family on every farm, enjoying an American Standard of Living, and the income from the farm to pay the bill'."

Mrs. Sewell said she was glad that Dr. Stanley could come to us and bring us in detail some of the findings of the Hoover Conference on Childhood. She (Mrs. Sewell) was also a member of that Conference and had been particularly interested in the rural child.

She told of how her department in Chicago had labored hard and long to provide a National Farm Bureau song, and how finally "The American Farm Bureau Spirit" had been evolved. Here she gave high praise to the splendid way the sixty Maryland Farm Bureau members had sung that song at the National Convention, winning the prize banner.

Mrs. Sewell praised the fine spirit of co-operation of the Maryland people, and made special mention of the splendid leadership of President Davis and Secretary Stewart. She also mentioned that our first President, Mr. Cohill, had been a member of the Home and Community Committee of the A. F. B. F. and had always been deeply interested in the women's work.

Mrs. Sewell said it was a pleasure to have had our Chairman, Mrs. Williams, give such an excellent talk at the Woman's Conference in Boston, preceding the National Farm Bureau Convention. There were more women taking part in the program of the convention this year than ever before, and a woman from Iowa was awarded a coveted Distinguished Service Medal. More and more, men and women are coming together for the betterment of mankind, and our Farm Bureau work cannot but help make a better day for agriculture.

Mrs. R. G. Spoerlein, Home and Community Chairman for Carroll County, had been assigned the subject, "The Farm Woman's Job in the Present Agricultural Crisis," and so appropriate were her remarks that we are printing them in full.

In designating the phrase, "Agricultural Crisis," I do not mean to signify that agriculture is the only business just now in the midst of a crisis, for never has every business throughout our country met such a crisis as it is now going through. While we farm people feel we are the hardest hit of any industry, yet when we sum up all our advantages over the advantages of the city industries, we may not be the worst off after all. The fact that we have been living in an age of prosperity makes it doubly hard for us to adjust ourselves to the trying times we are now passing through. Ex-Governor Louden says in a recent article written for a farm magazine, "The curse of America is a strange one. No other country has suffered from it. We have had too much of everything: too much coal, too much oil, too much iron, too much money, and, of course, too much grain." He goes on to say that nature has taken a hand to adjust what man has failed to adjust and that is production of farm products. This adjustment is perhaps felt more by the large producer than the small farmer because of the high cost of labor required to handle those products from seeding time to the marketing point. The farmer who can handle his farm business with the help of his family, without the need of much outside help, is the farmer who will contribute the most to not only agriculture but to his community, state and nation.

But, you may ask, what has the wife and mother to do in this adjustment? How can she help bring the taxes down and the prices of farm products up? What is her job in this present period of depression? Is not the wife and mother the hub in this great wheel called the family? Is it not around her that the whole family life centers? The wife and mother has always been the martyr of the home. She is the one who sacrifices some longed-for convenience that a new piece of machinery can be purchased for her husband. It is the mother who makes over clothes until she scarcely sees how she can get something out of nothing. It is the wife and mother who tries to figure out appetizing menus for the family table at the least possible cost. It has always been mother who denied herself a new dress that daughter might have one for a special school function. And so one might enumerate ever so many more instances of her sacrifice for the need of her family. In my mind, her job of today is a larger one that sacrifice. While she has always been and will always be the martyr of the home, she has a chance now to occupy the most interesting and delightful place in the home. She is no longer the drudge. She is the queen. She has a chance to make the farm home the most beautiful and delightful dwelling place and is now on a level intellectually and politically with the family. Just before the war came a period of transition for the farmer's wife. At last she was put on an equality with her husband. While I do not approve of a great many ways this equality has been carried to the extreme, yet it has done a great deal of good in the farm home. The farmer's wife is no longer left out of the financial conferences of the home; she is now the center of them. She no longer stays at home while hubby goes to the Farm Bureau, Grange or other community meetings. She is right by his side in community work, and in many cases is the dynamo furnishing inspiration to her husband's work. This widening of woman's sphere has given her a chance to come in touch with and to study the problems that are causing the greatest concern to the farmer in this period of depression.

One of the first requirements of a successful farm woman today is optimism. Statistics show that men are more easily discouraged than women and as a rule cannot face adversity nearly so bravely as women. It's pretty hard to put on a smile when your husband comes home with the news that you only receive twelve to nineteen cents a pound for chickens you had worked so hard to raise with such vigilant care. That eggs are only 29 to 30 cents a dozen when the price is ordinarily fifty and sixty cents at this time of the year. He tells you he received ten or twelve dollars for a calf which he should have received twenty-five or thirty dollars for, and yet the city purchaser is paying the same for veal cutlets that he paid a year ago. Should not the farm women be interested in these injustices and try to help correct them? The Farm Bureau has done and is now doing a great deal to adjust these troubles, but there is still lots more to be done. But such experiences as these we are meeting every day and it not only takes a smile to come through them without discouragement but it takes co-operation and thought to meet them and study out some other means to make up for the deficiency. So if our husbands are discouraged, for goodness sake, don't let us get discouraged at the same time for it will certainly be a sorry plight, but if we must be discouraged, and I guess we all are at some time, let's wait until hubby is feeling fine and fit so he can laugh back at us. Washington Irving once said: "I have often had occasion to remark the fortitude with which women sustain the most overwhelming reverses of fortune. Those disasters which break down the spirit of a man and prostrate him in the dust seem to call forth all the energies of the softer sex and give such intrepidity and elevation to their character that at times it approaches to sublimity." Then, too, we have the community problems to meet and help solve. And don't you know when we begin to study our community's needs we begin to feel pretty well off ourselves and forget our troubles. So after all I guess the best advice we farm women need when we are blue and discouraged is to help someone less fortunate than ourselves and we will be able to solve our own problems with renewed energy and strength.

It is a great problem today to figure out just what is the best means of an income. Most of us have specialized along certain lines and when the prices go down and we cannot meet the bills that come in to us, we must change our routine in some way to help things come out right on the balance sheet. Of course I believe it is a general complaint among husbands that wives are extravagant and should practice more rigid economy. This accusation is as old as the world itself, and for that reason it is perfectly natural for our husbands to make it, yet this is more than once a false accusation. The wife and mother must provide three meals a day for a family of six or eight out of surprisingly little sometimes. We almost wear out our recipe books trying to plan a pleasing, well-balanced meal and after all our effort we feel we have accomplished our task well hubby says: "Oh, why cook so much? You are too extravagant on the table." Then we come back with, "Any cook can get a good meal from plenty but it takes a good cook to get a good meal from little. I was out of bread so I had to bake biscuits. We had no meat today so I thought you would enjoy eggs scalloped in milk. Eggs are so much cheaper than meat anyway. Then I had a few outside celery stalks, so combining them with apples and nuts, I made a salad which you all like, and so on." What could he say? Well, he doesn't say anything because he knows wife has won. So it is usually the farmer's wife who studies out means of saving. It is her job to talk over the farm routine and plan outside means of making extra money. One farmer and his wife bought in a lot of thin young turkeys in the spring and turned them loose on the farm until fall when they found, without any work on their part, they had fifty or sixty young ones. The whole flock was fattened for Thanksgiving and Christmas markets, clearing them a nice purse of Christmas money. In another instance some farmers have gone into the huster business as a side line, and are making nice profit to help meet their expenses just now. Their wives are enthusiastic co-workers, overseeing the work on the farm while they come to Baltimore with their produce.

The farm wife and mother has a chance to bring culture and refinement into the farm home. It is her job to keep up to her children in their reading and music. The young people now are shown the cultural side of farm life more than ever before. We all know what 4-H club work is doing for our young people. It is making our young people the hope of the nation for agriculture. Every farm woman, whether she is a mother or not, should be a booster of any work that will teach our young people the art of more successful and interesting farm life.

It is the job of the farm woman to shoulder her share of the burden of farm work. If our husbands are in the dairy business, why should not we wives understand that work; if a poultry she should understand that work and be willing to take her share of the care of that poultry.

I remember well while I was home from a youngster up my father was fruit grower. He talked fruit and lived fruit. I was never interested in the production of apples, but it was talked and discussed in our home until mother and I knew every detail of producing those apples and the marketing of them. I worked in the packing house and knew every detail of the apple packing industry. It was my father's business and therefore the family's business.

My husband and I are in the dairy business and almost every hour of the day we think cows, cows, cows. We all milk, and I feel it is my job when he is not home to oversee the milking and care for that milk.

A great problem facing the farm woman is to bring the family expenses down to meet the income. It takes a lot of sacrifice and self-denial. We have been passing through years of plenty and it is all the harder for us to deny ourselves of luxuries now.

Another phase of her work now is to meet the community demands as far as her strength will permit. I do think sometimes the community activities are unjust to the farmer's wife who has a heavy burden on her shoulders anyway. The church demands her time along its many lines and the club asks part of her time if she is interested in extension service work. Then there are the Farm Bureau meetings and the Grange. During this time of depression when the wage earners of so many homes are out of work, she is called upon to do a double share of welfare work. So there seems to be no end to the demands made upon the farm woman who is at all interested in public work. But we all know this woman is serving her community in such a way that long after her life has passed on the influence of that life will exist in that community. And now this kind of work is needed in rural communities more than ever before. We have too many farmers' wives who are not willing to sacrifice their time for community work. They want to live according to their own planning. Every one of you have people like that in your own communities. If we want to help in building up our rural communities and be a booster of agriculture it means lots of sacrifice of our own time and pleasures. And it is a certain thing we can no better study the farm problems in these trying times than by getting in touch with every phase of our community life. How can we get in touch with the need of our own community by sitting at home and reading about other communities?

So, in my mind, the farm woman has just as big a job if not a little bigger than the farmer himself in these strenuous times, because her work must involve so many different phases of farm and community life.

God in His harmony has equal ends,
For cedar that resists and reed that bends,
For good it is a woman sometimes rules,
Holds in her hand the power, and manners, schools,
And laws, and mind, succeeding master proud,
With gentle voice and smiles she leads the crowd,
The somber human troop.

At this time a resolution was introduced by Mrs. H. C. Davis, Home and Community Chairman of Frederick County: "That we deeply regret losing Mrs. Stewart, who has served as Secretary of the Home and Community Committee of the Maryland Farm Bureau Federation of Maryland since its organization, and who, in addition to serving as Home and Community Chairman for Anne Arundel County, has freely given of her time and ability to all phases of Farm Bureau work in Maryland." Unanimously carried.

Mrs. Stewart thanked the group and said that she was very sorry to be leaving her many friends and associations in Maryland. She said that the work of the Farm Bureau in her local, county and State groups had been very dear to her heart; and that one of the reasons she could look forward to making a new home in North Carolina was that they would probably be able to assist in building up a Farm Bureau in that state. She urged the women to take more interest in their local meetings, to help encourage better business methods, to assist in demanding tax equalization for farmers, and to bear in mind always that the Farm Bureau membership belonged to the wife as well as the husband, and her responsibility was equal to his. Mrs. Stewart said it had been a real pleasure to work with Mrs. Jones, the first Chairman, and with Mrs. Williams, the present Chairman, and with every woman in the group.

The election of officers for the next year took place at this time, resulting in Mrs. Harry T. Williams being reelected to serve another year as Chairman. Mrs. H. C.

Davis, of Frederick County, was made Vice-Chairman, and Mrs. R. C. F. Weagley, of Washington County, was made Secretary.

Mrs. Williams, in accepting the Chairmanship, made a plea that the women present would see that every county had a Home and Community Chairman, and would assist with the work at home in every way she could. She also urged that they make it a habit to begin their meetings on time.

It was decided to begin the next Annual Meeting at 10 A. M.

Meeting adjourned at noon.

REPORT

of the

4-H Club Conference

January 7, 1931

BALTIMORE, MARYLAND

The Maryland 1931 State 4-H Club Conference was called to order by Mr. E. G. Jenkins, State Boys' Club Agent. John Stiles, of Rockville, Maryland, was elected President and Erna Riedel, of Gambrills, Maryland, as Secretary.

The purpose of the Conference:

To discuss the conditions facing the rural 4-H boys and girls of Maryland today and how we can build a 4-H program that will help them to find themselves as they meet these particular conditions.

Topics for Discussion:

Living costs.

Living conditions.

Social opportunities.

What urban vocations are open to rural boys and girls?

What does youth need to know about farming as a vocation in districts where farming as a living will be profitable for them?

How can we help boys and girls to find contentment with the highest standard of living they can afford at the present time?

What activities in our program will lead boys and girls to go from goal to goal?

How can we help our boys and girls to learn to be co-operative—to work for the interest of the group rather than for personal gain?

Miss Dorothy Emerson, Girls' Club Agent, was chosen discussion leader. She began the discussion by explaining that similar topics as to whether 4-H club work is meeting the needs of rural boys and girls, were discussed at an Eastern States Conference of local leaders. Miss Emerson attended this conference. At another conference with forty girls Miss Emerson discussed problems in regard to farm conditions as far as the farm home is concerned. All of the girls in the conference said they would make the farm their home if it contained all modern conveniences.

Mrs. L. A. Sutton, a local leader of Kent County, then continued the discussion by stating that the boys and girls who demand modern conveniences should be taught the cost of them. This would do much in making the boys and girls more reasonable and patient.

Mr. W. R. McKnight, county agent of Dorchester County, spoke of an example of a girl who had previously lived in his home community, but who had left in order to be away from rural life. Upon one occasion he met this girl in Philadelphia. He found her rather unhappy and lonely for she said her social life extended no further than the boarding house where she lived.

Mr. A. A. Ady, assistant county agent of Montgomery County, believed that the average rural boy and girl had no idea of the value of money in the city and that the shift of rural boys and girls could be checked by discussing at meetings the value of a certain amount of money and what could be accomplished with it as far as living conditions and recreation in the city are concerned.

Miss Emerson suggested that budgets should be drawn up so that each boy and girl of the family would know what share he or she was entitled to. An over desire for things not obtainable would be eliminated.

A group discussion among the 4-H boys present at the meeting continued as to whether club work was meeting the problems of each boy present. The following were the answers given:

Club work provides a valuable education.

Club work gives inspiration to remain on the farm and enjoy farm life.

Interests established on club projects develop a deep desire to remain on the farm.

Atmosphere of life as a whole in the city does not appeal as the atmosphere of rural life.

Through lack of opportunity for obtaining a special school training which worth-while occupations of the city demand those who go to town are handicapped. Club boys find that through club work they have received valuable training in the education of farm practices. This training means success to them on the farm.

The problem then arose whether boys and girls should be encouraged to remain on the farm.

Mr. W. H. Evans, assistant county agent of Harford County, believed that boys and girls should not be over-encouraged to remain on the farm, but rather be taught how to adjust themselves to all surroundings in which they may decide to place themselves whether it be in the country or city. Farming can not absorb half the boys and girls born and raised in the country.

Mr. Mylo S. Downey, assistant county agent of Allegany County, spoke of a personal experience where there are several boys in a family and because of economic conditions all could not remain on the farm. To encourage these boys to remain on the farm would probably mean hardship and failure.

Chester Cissel, a club member of Howard County, thought that boys and girls should be encouraged to remain on the farm. He felt that the Extension Service should encourage boys and girls to remain on the farm and make farm life attractive for them.

Mrs. Sutton believed that the talents of boys and girls should be considered and they be encouraged to follow lines of work in which they may be most interested. Only such people will succeed.

Mr. O. W. Anderson, county agent of Montgomery County, through his experience with boys, found that only the boys having interest in the farm should be encouraged to remain and then helped along the road to success.

There were 4-H club delegates of older boys from County Federations and Councils and from local clubs from twelve counties, many of whom discussed the problems freely. Several girls' clubs were represented and most of the counties were represented by home demonstration agents, county agents and local leaders, many of whom took part in the discussions.

Mr. Jenkins sketched a county program of work on the blackboard.

Mr. Evans then summed up the considerations of the meeting:

1. Plan program which trains for life and gives knowledge of many vocations.
2. Agriculture, an industry to encourage, offers a challenge.
3. Train boys to appreciate rural advantage.
4. Club program should present both rural and urban life.
5. Need for analyzing this program from both viewpoints.
6. Club work should teach us how to live.

Miss Emerson called for statements from the group as to what we would aim at in 1931 and the following were resolved upon:

1. Interest parents.
2. Leaders must have youth's viewpoint: act and live it.
3. Quality not quantity.
4. Develop backward boys and girls.
5. Recreation in farm homes.
6. Closer co-ordination of boys and girls club work.
7. County-wide achievement days.
8. Teach better farming and home-making.

9. Develop leadership.
10. Character training for any future.
11. Train boy for vocation he is best fitted for.
12. Train girl for self-development.
13. More local leaders.
14. Adults sponsor clubs.

ERNA RIEDEL, *Secretary.*

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